FURUNO

OPERATOR'S MANUAL

INMARSAT FLEETBROADBAND
SHIP EARTH STATION

FELCOM 250
MODEL **FELCOM 500**

FURUNO ELECTRIC CO., LTD.

www.furuno.co.jp

ECF

(Elemental Chlorine Free)

The paper used in this manual
is elemental chlorine free.

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(DAMI) FELCOM500/250

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＊０００１７０９７７１５＊

IMPORTANT NOTICES

General

- This manual has been authored with simplified grammar, to meet the needs of international users.
- The operator of this equipment must read and follow the descriptions in this manual. Wrong operation or maintenance can cancel the warranty or cause injury.
- Do not copy any part of this manual without written permission from FURUNO.
- If this manual is lost or worn, contact your dealer about replacement.
- The contents of this manual and equipment specifications can change without notice.
- The example screens (or illustrations) shown in this manual can be different from the screens you see on your display. The screens you see depend on your system configuration and equipment settings.
- Save this manual for future reference.
- Any modification of the equipment (including software) by persons not authorized by FURUNO will cancel the warranty.
- All brand and product names are trademarks, registered trademarks or service marks of their respective holders.

How to discard this product

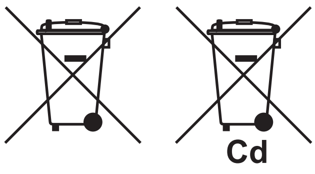
Discard this product according to local regulations for the disposal of industrial waste. For disposal in the USA, see the homepage of the Electronics Industries Alliance (http://www.eiae.org/) for the correct method of disposal.

How to discard a used battery

Some FURUNO products have a battery(ies). To see if your product has a battery, see the chapter on Maintenance. Follow the instructions below if a battery is used. Tape the + and - terminals of battery before disposal to prevent fire, heat generation caused by short circuit.

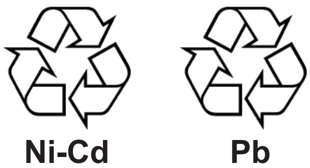
In the European Union

The crossed-out trash can symbol indicates that all types of batteries must not be discarded in standard trash, or at a trash site. Take the used batteries to a battery collection site according to your national legislation and the Batteries Directive 2006/66/EU.



In the USA

The Mobius loop symbol (three chasing arrows) indicates that Ni-Cd and lead-acid rechargeable batteries must be recycled. Take the used batteries to a battery collection site according to local laws.



In the other countries

There are no international standards for the battery recycle symbol. The number of symbols can increase when the other countries make their own recycle symbols in the future.

⚠ SAFETY INSTRUCTIONS

Read these safety instructions before you operate the equipment.

⚠ WARNING	Indicates a condition that can cause death or serious injury if not avoided.
⚠ CAUTION	Indicates a condition that can cause minor or moderate injury if not avoided.

⚠ Warning, Caution ⦸ Prohibitive Action ❗ Mandatory Action

⚠ WARNING

Do not open the equipment.

This equipment uses high voltage that can cause electrical shock.
Only qualified persons can work inside the equipment.

Turn off power at switchboard if the something is dropped inside the equipment.

Fire or electrical shock can result if the power remains on.

Turn off power at switchboard if the equipment is emitting smoke or fire.

Fire or electrical shock can result if the power remains on.

Turn off power at switchboard immediately if you feel the equipment is not working properly.

Fire or electrical shock can result if the power remains on.

⚠ CAUTION

Do not dissassemble or modify the equipment.

Fire, electrical shock or bodily injury can result.

Do not operate the equipment with wet hands.

Fire or electrical shock can result.

Keep the equipment away from rain, water and water splash.

Fire or electrical shock can result if water gets into the equipment.

Use the correct fuse.

Use of a wrong fuse can cause fire.

Do not place liquid-filled containers on the top of the equipment.

For or electrical shock can result

⚠ WARNING

Do not approach the radome closer than 1.4 m (FELCOM 500) or 0.7 m (FELCOM 250) when it is transmitting.

The radome emits radio waves which can be harmful to the human body, particularly the eyes.

RF power dendity on antenna aperture	FELCOM500 distance	FELCOM250 distance
100W/m^2	-	-
25W/m^2	0.5 m	0.4 m
10W/m^2	1.4 m	0.7 m

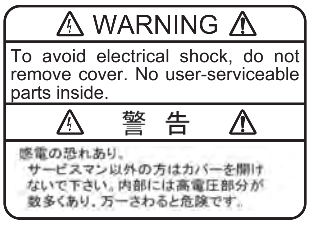
⚠ CAUTION

The glass of an LCD panel breaks easily. Handle the LCD carefully.

Injury can result if the glass breaks.

Warning Labels

Warning labels are attached to the equipment. Do not remove the labels. If a label is lost or damaged, contact a FURUNO dealer abouit relplacement.

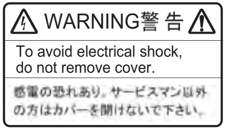

⚠ WARNING ⚠

To avoid electrical shock, do not remove cover. No user-serviceable parts inside.

⚠ 警 告 ⚠

感電の恐れあり。
サービスマン以外の方はカバーを開けないで下さい。内部には高電圧部分が数多くあり，万一さわると危険です。

Name: Warning Label (1)
Type: 86-003-1011-3
Code No.: 100-236-233-10


⚠ WARNING警 告 ⚠

To avoid electrical shock,
do not remove cover.

感電の恐れあり。サービスマン以外の方はカバーを開けないで下さい。

Name: Warning Label
Type: 6-021-3517-0
Code No.: 100-350-230-10

505 Emergency Call

In the event of an emergency, do the following to make an emergency call:

Note: 505 Emergency calling is an INMARSAT service and is not GMDSS compliant.

1. Remove the handset from the cradle, and dial [505] at the idle screen.
2. Press ☎ or [#] to call the number.
   Corresponding to the satellite in use, you will be connected to one of the following RCC services.

Satellite	RCC
EMEA (West Asia, Africa, Eastern Atlantic area)	RCC Den Helder (Holland)
APAC (Western Pacific, Southeast Asia, Oceania area)	RCC Australia (Canberra, Australia)
AMER (Western Atlantic, Eastern Pacific, Continental America area)	JRCC Norfolk (Norfolk, Virginia, USA)

   For example, if using the above operation is performed in Japan, it is covered by the APAC service area, and you will be connected to RCC Australia.
3. Once connected to RCC, speak slowly and clearly provide the following information:
   - **Who you are**: Vessel name, telephone number and callsign.
   - **Where you are**: Your position in latitude and longitude or a bearing and distance from a known geographical point.
   - **What is wrong**: Nature of emergency or difficulty.
   - **Type** of assistance required.
   - **Number** of persons on board.

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FOREWORD

A Word to the Owner of the FURUNO FELCOM 250/500

Congratulations on your choice of the FURUNO FELCOM 250/500 Inmarsat Fleetbroadband Ship Earth Station. We are confident you will see why the FURUNO name has become synonymous with quality and reliability.

For over 60 years FURUNO Electric Company has enjoyed an enviable reputation for quality marine electronics equipment. This dedication to excellence is furthered by our extensive global network of agents and dealers.

This equipment is designed and constructed to meet the rigorous demands of the marine environment. However, no machine can perform its intended function unless operated and maintained properly. Please carefully read and follow the recommended procedures for operation and maintenance.

We would appreciate hearing from you, the end-user, about whether we are achieving our purposes. Thank you for considering and purchasing FURUNO equipment.

Features

The FELCOM 250/500 consists of an antenna unit, communication unit, and a handset. The FELCOM 250/500 provides telephone, facsimile and data services.

The main features of the FELCOM 250/500 are:

- Conforms to the following standards: INMARSAT Fleetbroadband SDM, IEC 60945 (Ed. 4), IEC 60529 (Ed. 2), IEC 61162-1 (Ed. 2)
- SIM card based billing
- Voice communication: 4 kbps AMBE+2 or 3.1kHz Audio
- Facsimile: 3.1 kHz Audio
- 64kbps ISDN (UDI/RDI) transmission (FELCOM 500 only)
- Packet Communication

Packet	Felcom 250	Felcom 500
Standard IP (best effort)	Max. 284 kbps	Max. 432 kbps
Streaming IP	8 kbps, 16 kbps, 32 kbps, 64 kbps, 128 kbps	8 kbps, 16 kbps, 32 kbps, 64 kbps, 128 kbps, 256 kbps

- Simultaneous voice and data transmission
- SMS (Short Message Service) maximum 160 characters.
- Data packet billing-based internet connection

Note: ISDN UDI/RDI data streaming and IP packet communication can incur high costs depending on communication time. Note that unexpectedly high costs could occur.

Software Information

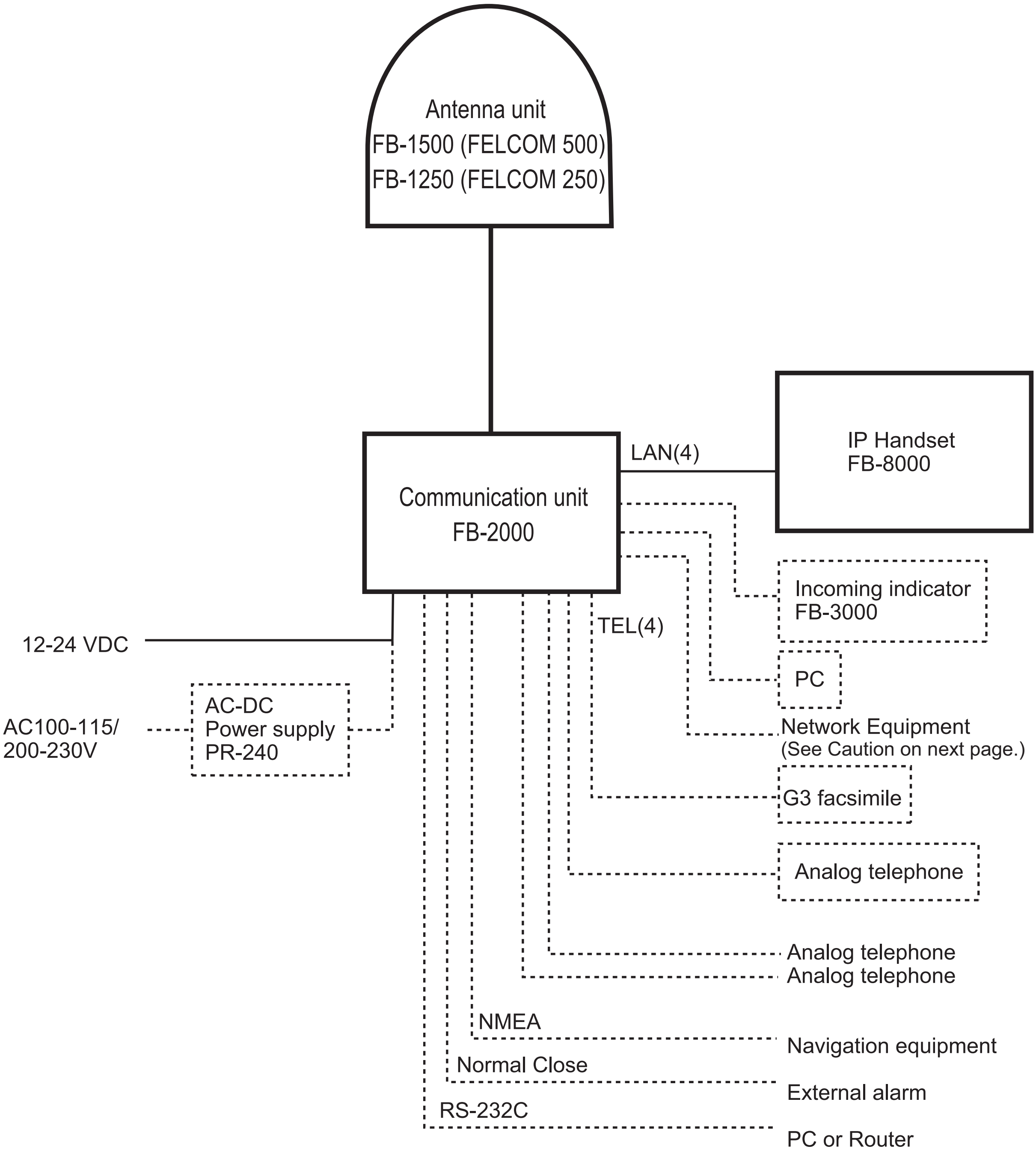
This product includes software to be licensed under the GNU General Public License (GPL), GNU Lesser General Public License (LGPL), BSD, Apache, MIT and others. The program(s) is/are free software(s), and you can copy it and/or redistribute it and/or modify it under the terms of the GPL or LGPL as published by the Free Software Foundation. Please access to the following URL if you need source codes: https://www.furuno.co.jp/contact/cnt_oss.html
This product uses the software module that was developed by the Independent JPEG Group.
France Telecom - TDF - Groupe des Ecoles des Telecommunications Turbo codes patents license.

PROGRAM NUMBER

Unit	Program Location	Program Number	Date of Alteration
FB-1250 (FELCOM 250)	ATB	1650227-01.XX ATB SW v12	
	HPA	1650228-01.XX HPA SW v08	
FB-1500 (FELCOM 500)	ATB	1650223-01. XX ATB SW v24	
	HPA	1650224-01.XX HPA SW v08	
FB-2000	MODEM	1650207-02.XX	
	HUB	1650213-02.XX	
FB-8000	HANDSET	1650217-02.XX	
FB-3000	INCOM. INDI	1650220-01.XX	

XX: Minor alteration

SYSTEM CONFIGURATION


Antenna unit
FB-1500 (FELCOM 500)
FB-1250 (FELCOM 250)
Communication unit
FB-2000
LAN(4)
IP Handset
FB-8000
Incoming indicator
FB-3000
PC
Network Equipment
(See Caution on next page.)
TEL(4)
G3 facsimile
Analog telephone
Analog telephone
Analog telephone
12-24 VDC
AC100-115/
200-230V
AC-DC
Power supply
PR-240
NMEA
Navigation equipment
Normal Close
External alarm
RS-232C
PC or Router

Environmental Category

Antenna unit	To be installed in an exposed area
Communication unit, IP handset, etc.	To be installed in a protected area

Caution when connecting shipboard network to FELCOM 250/500

If the FELCOM 250/500 is connected to a shipboard network that has a data monitoring system or the like, the FELCOM 250/500 can become unstable when the equipment in the network transmits large volumes of broadcast packets. If this type of shipboard network is connected to the FELCOM 250/500, consultation with the network system manager is necessary to provide measures to ensure the FELCOM 250/500 operates stably.

An example of a system that transmits and receives large volumes of broadcast data is a data monitoring system which has equipment that transfers large data (images, etc.) in short intervals. One remedy is to connect a router (that is capable of handling large volumes of data) between the shipboard network and the FELCOM 250/500.

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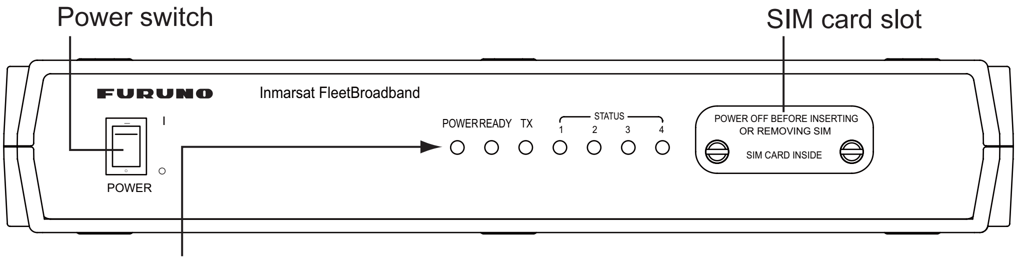
1. BASIC OPERATION

1.1 Communication Unit and Handset overview

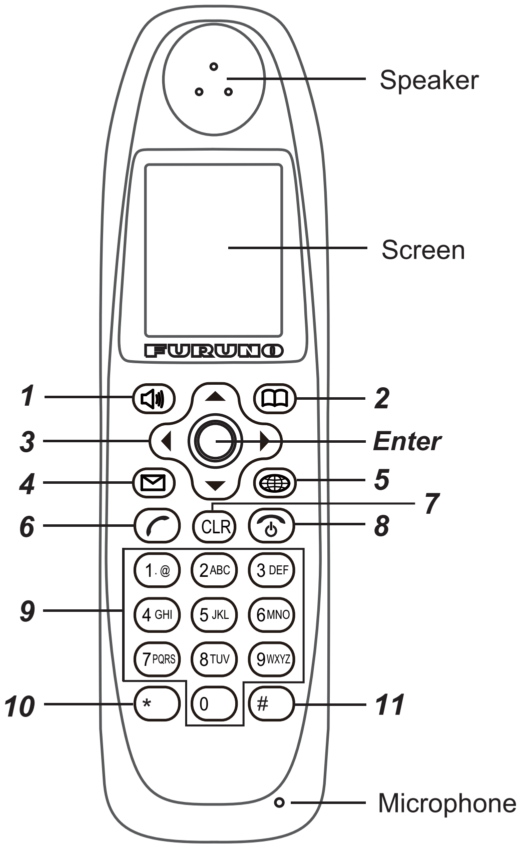
1.1.1 Communication unit

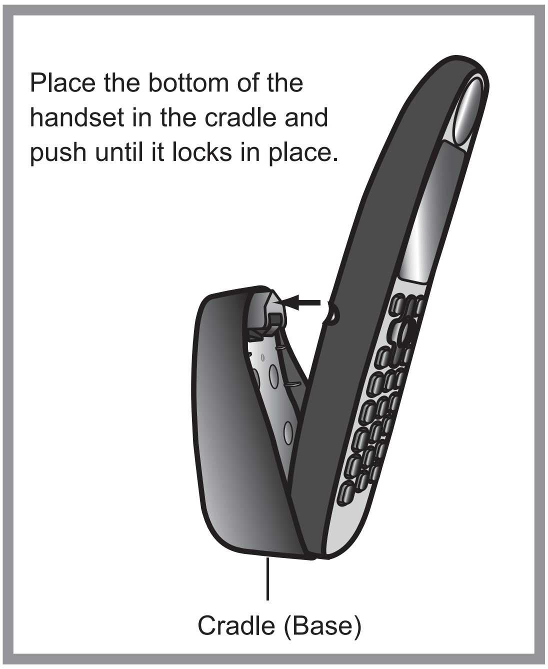

Power switch
SIM card slot
FURUNO
Inmarsat FleetBroadband
I
POWER
POWER READY TX
STATUS
1 2 3 4
POWER OFF BEFORE INSERTING
OR REMOVING SIM
SIM CARD INSIDE

Status lamps

POWER: Lights green when power is on.
READY: Lights green when a satellite is being tracked. (Voice/Data communication available)
TX: Lights green when transmitting.
STATUS (1 - 4): Lights green when operating correctly.

1.1.2 Handset


Speaker
Screen
FURUNO
1
2
3
Enter
4
5
7
6
8
CLR
1.@
2ABC
3DEF
4GHI
5JKL
6MNO
7PQRS
8TUV
9WXYZ
*
0
#
9
10
11
Microphone


Place the bottom of the handset in the cradle and push until it locks in place.

Cradle (Base)

Number	Key	Function
1	🔊	• Opens the [Sound] menu. • Softkey (Lower left menu item button)
2	📖	• Opens the Contacts screen. • Softkey (Lower right menu item button)
3	▲	• Moves the cursor up. • Increases the volume.
	▼	• Moves the cursor down. • Decreases the volume.
	◀	• Moves the cursor left. • Opens Incoming History.
	▶	• Moves the cursor right • Opens Outgoing History.
	ENTER ◎	• When Information window is not displayed: Opens the Main Menu. • When information window is displayed: Displays new information. • Softkey: Execute content that appears at center bottom of screen.
4	✉	Opens [SMS] menu.
5	🌐	Opens [Web top] menu.
6	📞	• Call • Answers phone.
7	CLR	• Returns to the previous menu. • Erases a number or letter.
8	☎	• Hangs up phone. • Cancels operation. • Long push: Restart handset.
9	1. @	• Selects item corresponding to number. • Enters phone number and text.
	2ABC	
	3DEF	
	4GHI	
	5JKL	
	6MNO	
	7PORS	
	8TUV	
	9WXYZ	
	0	Enters phone number and text.
10	*	• Press once for (*) and twice for (+) at the transmit screen. • Enters text.

Number	Key	Function
11	#	• Symbol (#) • Enters text.

1.2 SIM Card

Note: The FELCOM 250/500 uses only Inmarsat Fleetbroadband compatible SIM cards.

Individual user information is stored on the SIM card. The system reads information when the SIM card is inserted. The user registration number is saved on the SIM card, and it is possible to transmit with different SIM cards from one terminal. In this case, the transmission fees are charged to the person registered to the SIM Card. Contact addresses can be saved on the SIM card.

There are 4 registration codes on the SIM card, [PIN1], [PUK1], [PIN2], [PUK2]. This unit does not use the code [PIN2] and [PUK2]. Be sure to carefully write down the [PIN1] and [PUK1] code numbers and do not lose or forget them.

PIN code

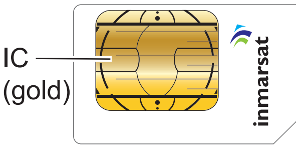
To prevent unauthorized use by a third party, there is a 4-8 digit PIN (Personal Identification Number) code. When the unit is turned on, the user will be prompted to enter the PIN code. Enter the [PIN1] code. If the wrong code is entered 3 times, the system will lock and the Communication Unit cannot be used.

PUK code

If the system locks, use the 8-digit PUK (PIN Unblocked Key) code to unlock the system. Use the code [PUK1]. If the wrong PUK code is entered 10 times, the SIM card will cease operating. If this happens, contact the retailer of the SIM card.

Handling the SIM card

- Ensure the power is off before inserting/removing the SIM card.
- Do not touch the IC part of the SIM card.



- Always remove the SIM card by hand.

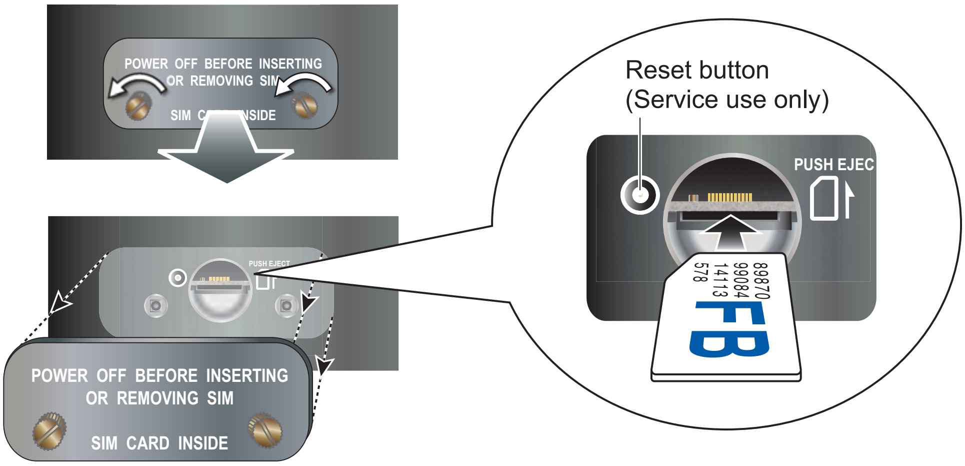
1.3 Power On/Off

How to turn on

The **POWER** switch on the front panel of the Communication Unit switches all units of the FELCOM 250/500 terminal on/off:

- IP Handset
- Communication Unit
- Antenna Unit
- Incoming Indicator (option)

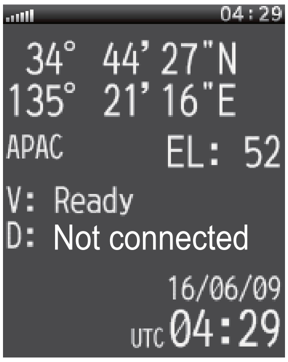
1. By hand, loosen the two screws near the insertion slot on the front of the Communication Unit and remove the cover plate. The SIM card port is found underneath.
2. Insert the SIM card IC face down into the card port.



Reset button
(Service use only)

To eject the SIM card, push it in with your finger.

3. Replace the cover unfastened at step 1.
4. Turn on the power switch on the Communication Unit. When the following screen displays "V: Ready" and "D: Not connected" on the handset, communication is possible. Wait approx. three minutes for this screen to display.



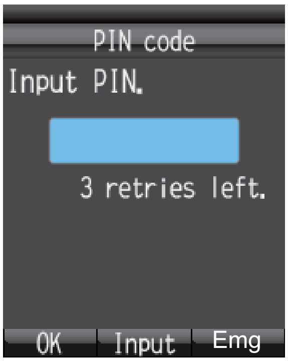
```
                04:29
 34°  44' 27"N
135°  21' 16"E
APAC      EL: 52
V: Ready
D: Not connected
             16/06/09
          UTC 04:29
```

* If the handset's IP address is not set by web software, “D: No Permission” is shown.

Idle screen

Note 1: Usually, about 3 minutes is required for the above screen to display. If there are obstacles or interference in the path of the satellite, more time may be required.

Note 2: You may be asked for PIN code depending on SIM card settings. If password is required, go to step 5.



Input PIN.

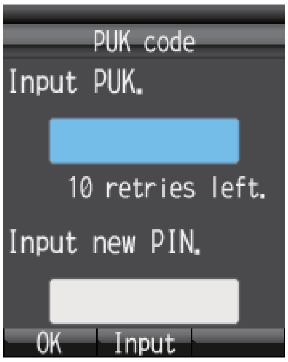
3 retries left.

5. Press the **Enter** key to display the PIN code input screen.
6. Enter the 4- to 8-digit SIM PIN code, and press the **Enter** key.
7. Press the 🔊key.
   If the PIN code is entered correctly, the idle screen appears on the handset. If entered wrong, the message “PIN code is invalid” appears.
8. To brighten the screen, press the ▲ key while pressing the [0] key. To darken the screen, press the ▼ key while pressing the [0] key. The brilliance of the screen can be adjusted from any screen.

Note: You call the 505 emergency calling with no PIN code.

If the PIN code is locked

If the wrong PIN code is entered three times consecutively, the current PIN number becomes locked and the PUK screen looks like the one shown below. Do the procedure below to unlock the PIN code.



Input PUK.

10 retries left.

Input new PIN.

1. Press the **Enter** key to display the PUK code input screen.
2. Enter the SIM card PUK code. Press the **Enter** key.
3. Press ▼ to select the [Input new PIN.] field then press the **Enter** key.
4. Enter the new PIN code then press the **Enter** key.
5. Press the 🔊 key.

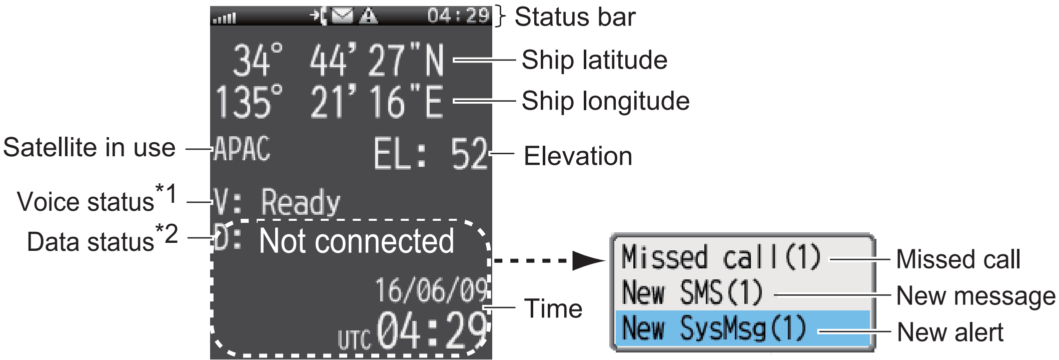
Handset and web software operational ability

The following operations are possible using the handset and Web software:

Item	Handset	Web Software
Phone	Yes	No
Contacts	Yes	Yes
SMS (Short Message Service)	Yes	Yes
Internet	Yes	Yes
Handset settings	Yes	Yes (possible with SIP client setting, network setting only)
Communication Unit settings	No	Yes

1.4 Screen Layout

Handset Screen



04:29
34° 44' 27"N
135° 21' 16"E
APAC EL: 52
V: Ready
D: Not connected
16/06/09
UTC 04:29

Missed call(1)
New SMS(1)
New SysMsg(1)

Status bar
Ship latitude
Ship longitude
Satellite in use
Elevation
Voice status*1
Data status*2
Time
Missed call
New message
New alert

Alert information window
(Above window appears when unread information exists. Number in parentheses is number of items.)

*1: V: -- (Unavailable)
V: Ready (Ready)
V: Voice (Voice line busy)
V: Fax (Fax transmitting)
V: UDI (Using ISDN UDI)(FELCOM 500 only)
V: RDI (Using ISDN RDI) (FELCOM 500 only)

*2: D: Not connected (Data line disconnected)
D: Connected (Data line connected)
D: No permission (No connection permission)

Status indication

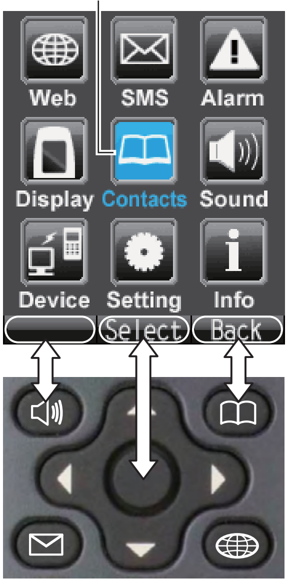
Icon	Definition
📶	Reception strength: Satellite receive signal strength shown by 8 bars.
☎	Missed call: Appears when incoming call is missed. (When the missed call indication feature is activated.)
✉	New Message: Displays when a new SMS message arrives. (When the message arrival notification features is activated.)
⚠	Alarm: Appears for network trouble. Buzzer sounds.
01:51	Clock: Shows the current UTC time.

1.5 Basic Operation of the Handset

1.5.1 Main menu

The handset main menu has 9 items: [Web], [SMS], [SysMsg], [Display], [Contacts], [Sound], [Device], [Setting], and [Info].

1. At the idle screen, press the **Enter** key to open the main menu.

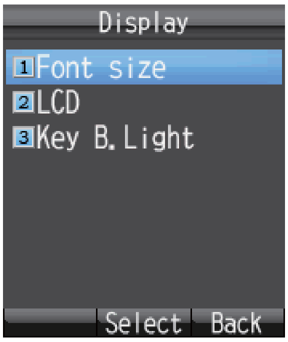


Cursor (Light-blue highlight)

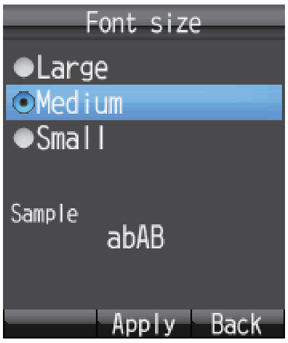
Select with the corresponding key

2. Press ◀, ▲, ▶ or ▼ to select an icon in the menu. The selected icon is highlighted in light-blue.

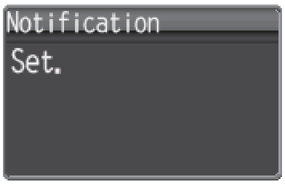
3. Press the **Enter** key to choose [Select]. The corresponding menu displays for the selected item. For example, if you select [Display] at step 2, the following menu appears.


Display
1 Font size
2 LCD
3 Key B.Light
Select
Back

4. In the selected menu, press ▲ or ▼ to choose a menu item, and press the **Enter** key to open the item. Or press the corresponding number key for that item. The item screen appears. As an example, the [Font size] menu is shown below.


Font size
Large
Medium
Small
Sample
abAB
Apply
Back

5. Press ▲ and ▼ to select an item then press the **Enter** key. A pop-up window like the one below appears for three seconds.



Notification

Set.

6. Press ⏻ to close the menu.

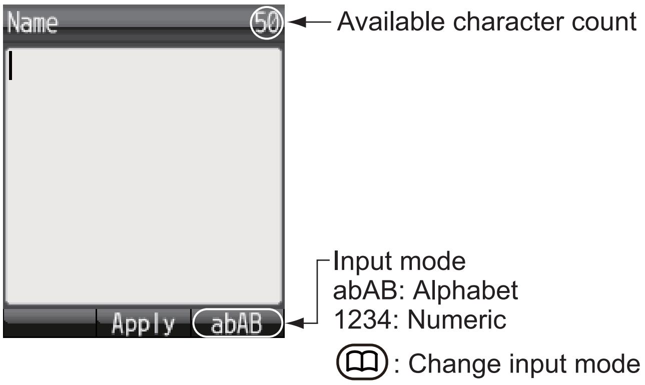
1.5.2 How to input characters

Input alphabet and numeric characters using the keys on the handset. Press the key once to input a number, or press repeatedly to cycle through alphabet characters.

Key	Alphanumeric character (abAB mode)	Character (1234 mode)
1	., @, -, _, /, :, 1	1
2	a, b, c, A, B, C, 2	2
3	d, e, f, D, E, F, 3	3
4	g, h, i, G, H, I, 4	4
5	j, k, l, J, K, L, 5	5
6	m, n, o, M, N, O, 6	6
7	p, q, r, s, P, Q, R, S, 7	7
8	t, u, v, T, U, V, 8	8
9	w, x, y, z, W, X, Y, Z, 9	9
0	Space, 0, symbols	0
*	~, ?, ,(comma),’, !	n/a
#	• If characters are not fixed, cycle through characters in reverse order. • If the cursor is on a character, press to insert a line break.	.

Example of text input

For example, to enter "furuno" at the text input screen, do the following:


Name
50
Apply
abAB
Available character count
Input mode
abAB: Alphabet
1234: Numeric
: Change input mode

1. With [abAB] selected in the lower right of the screen, press the **3** key three times.
   Note: Press the **CLR** key to delete a character.
2. Press **8** two times.
3. Press **7** three times.
4. Press **8** two times.
5. Press **6** two times.
6. Press ▶.
   To continue input with the same key, move the cursor right one space.

7. Press **6** three times.
   Note: Press ▼ for a line break at the end of a sentence, or **#** for a line break in the middle of a sentence.

1.5.3 How to edit text

Edit text at the text input screen.

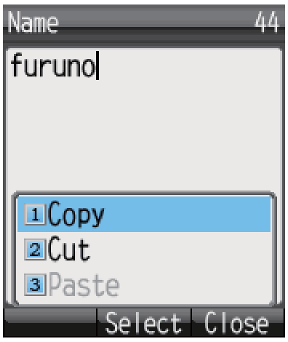
How to correct text

1. At the text input screen, put the cursor at the beginning of the text to correct.
2. Press the **CLR** key. One character erases.
   Note: To erase all characters to the right of the cursor, press and hold the **CLR** key down.
3. Input the correct character(s).

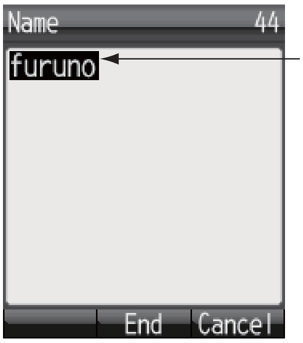
How to copy or cut text

Copy (or cut) indicated text and paste into another message.

1. At the input screen, press the 🔊 key to open the sub menu.



2. Press **1** (to Copy), or **2** (to Cut).
3. Place the cursor at the beginning of the text to copy or cut, and press the **Enter** key.
4. Press ▶ to move the cursor and highlight the desired text to copy or cut (maximum 192 characters).
   Note: Press the **CLR** key to reselect the text to copy or cut.



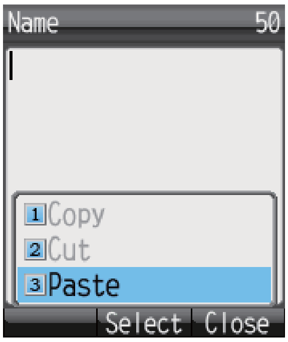
Highlighted text

5. Press the **Enter** key. The text is copied to the clipboard (max.10 text items). If you copy an 11th text item, the oldest text item is erased.

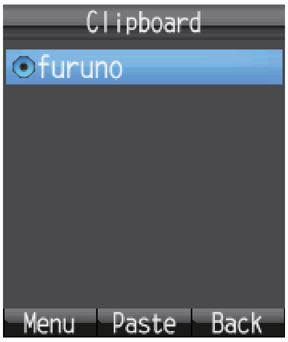
How to paste text

Paste text from the clipboard into a message.

1. Move the cursor to the position to paste the text.
2. Press the 🔊 key to open the sub menu.


Name
50
1 Copy
2 Cut
3 Paste
Select
Close

3. Press the **3** key to select [Paste].
   The latest item is at the top of the list.


Clipboard
furuno
Menu
Paste
Back

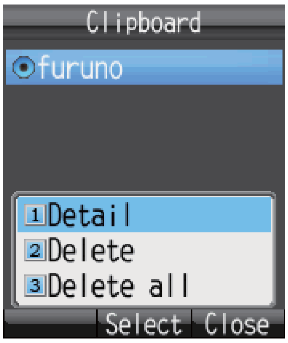
4. Press ▲ or ▼ to select the item to paste.

   Note: To view the detailed information screen, with the item selected, press 🔊, **1**(Detail) in that order. Press 📖 to return to the clipboard.
5. Press the **Enter** key. Character appears at the location selected at step 1.

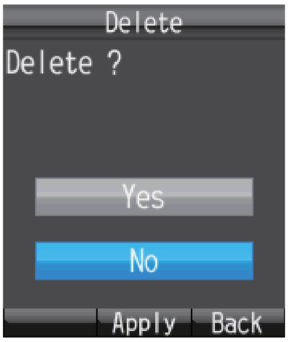
How to delete items from the clipboard

Delete one or all items from the clipboard as follows.

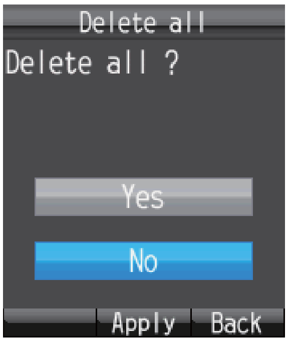
1. Open the clipboard screen. To delete one item, refer to step 2. To delete all items go to step 3.
2. Press ▲ or ▼ to select the item to delete.
3. Press the 🔊 key to open the submenu.


Clipboard
furuno
1 Detail
2 Delete
3 Delete all
Select
Close

4. To delete one item, press **2** [Delete]. To delete all items press **3** [Delete all]. One of the following confirmation screen appears:



[Delete] selected



[Delete all] selected

5. Press ▲ to select [Yes], and press the **Enter** key. When complete, the message "Deleted" or "All deleted" displays.

1.6 Password

Refer to the following table for information on passwords:

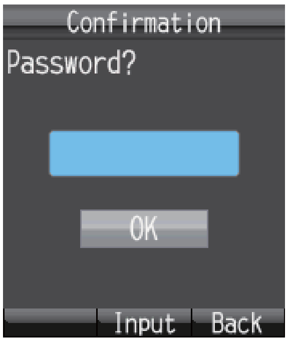
	Password	Use	Password Update
Handset	Operation password[*1]	Delete all items and display specific menus.	Refer to section 3.5.4
	SMS password[*1, *2]	When accessing SMS menu.	Refer to section 6.1.6
	SIP password	Authentication password for SIP server. When you change the SIP password you must also change the Internal line password to the same, by WEB software.	Refer to section 3.5.3
Web Software	Administrator password*1	When logging in as administrator.	Refer to section 6.1.7
	SMS password[*1, *2]	When opening SMS top menu.	Refer to section 6.1.6
	extension line password	When registering a new extension line. Password is the same as handset SIP password.	Refer to page 6-7

[*1] The factory set password is "01234567".

[*2] SMS password for handset and web software is commonly used.

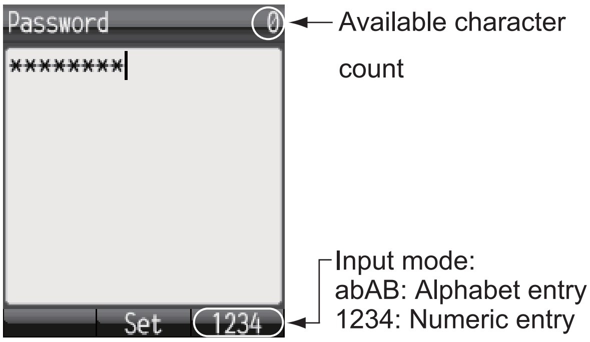
How to enter the password

This section explains how to enter the operation password. When prompted for a password, do the following:



1. Press the **Enter** key to open the password input screen.
2. Enter the password, and press the **Enter** key.

   Press the 📖 key to change between input modes:



Available character count

Input mode:
abAB: Alphabet entry
1234: Numeric entry

3. Press the ▼ key to select [OK], then press the **Enter** key.
   Note: If the entered password is wrong, the message "Incorrect" appears. Enter the correct password.

2. HANDSET OPERATIONS

2.1 Handset

You can call someone on land or ship-to-ship from the handset. This unit allows the handset to be used at the same time as the internet. However, in the case of FELCOM500, voice calling is not available during ISDN (UDI/RDI) data communication

2.1.1 How to make a call

There are three methods to make a call:

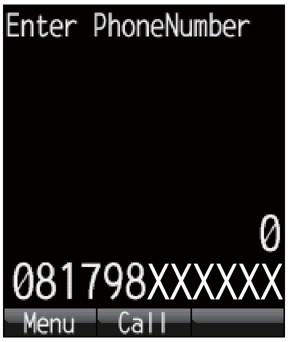
1) Enter the number of the party to call
2) Select a number from the call History
3) Select a number from the Contacts list

Do the following operation when the idle screen shows "V: Ready".

How to enter a number

To enter a number from the handset, do the following:

1. Remove the handset from the cradle, and enter the number from the idle screen:



Enter PhoneNumber

0
081798XXXXXX

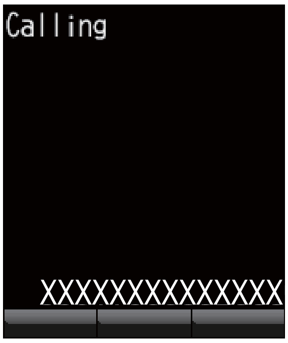
Land: [00], country code, subscriber number.
Ship-to-ship (Inmarsat terminal): [00], [870] (ocean area code), Inmarsat Fleetbroadband number.
Internal call: 4 digit inter-line number

Note 1: To erase a number that is entered wrong, press the **CLR** key.

Note 2: There are two voice services, [4kbps AMBE+2] and [3.1kHz Audio]. Select the service to use by entering [1][*] or [2][*] before the phone number. If nothing is input before the number, [4kpbs AMBE+2] is used by default. Depending on SIM card contract, [3.1kHz Audio] cannot be used. Contact the company which issues your SIM card for details.

Service	Charge	Selection Method	Display on idle screen
4kbps AMBE+2 (Standard quality)	Low cost	[1][*] + subscriber number	Voice
3.1kHz Audio (High quality)	High cost	[2][*] + subscriber number	Fax

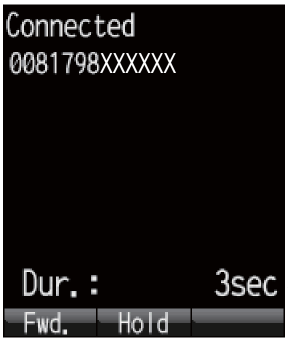
2. Press the key or press the **Enter** key to send the call. The indication shown below appears on the screen.
   Note: If connection fails, the message "Can't connect" appears.



Calling

XXXXXXXXXXXXXX

3. Complete the conversation.
   During conversation, the duration of the communication time is counted and displayed on screen (in seconds).



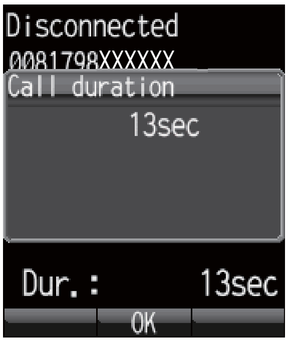
Connected

0081798XXXXXX

Dur. : 3sec

Connection time

4. Press the key or replace the handset in the cradle to end the call. The duration of the call is indicated in the display for three seconds and the idle screen appears.



Disconnected

0081798XXXXXX

Call duration

13sec

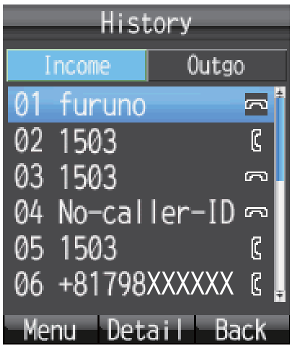
Dur. : 13sec

Note: To make a telephone call from land to the Inmarsat Terminal FELCOM 250/500, dial the identification code of the telephone carrier, [870] (ocean area code) then the Inmarsat number.

How to place a call from the History list

A number can be dialed directly from the outgoing and incoming call history list. Up to 20 calls can be stored in each history list. When the 21st call occurs, the oldest logged call is deleted from the list.

1. From the idle screen press ◀ (for incoming history) or ▶ (for outgoing history). The caller's name appears in the history list if it is registered in the Contacts list. "No-caller-ID" appears if the number is hidden. Press ◀ and ▶ to change between incoming and outgoing history.



History

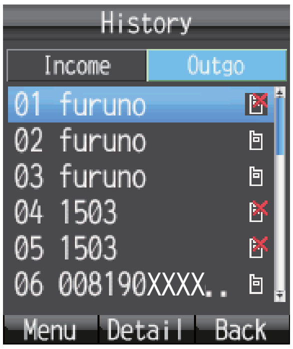
Income | Outgo

01 furuno
02 1503
03 1503
04 No-caller-ID
05 1503
06 +81798XXXXXX

Menu | Detail | Back

Incoming history

◀ OR ▶



History

Income | Outgo

01 furuno
02 furuno
03 furuno
04 1503
05 1503
06 008190XXXX..

Menu | Detail | Back

Outgoing history

: Received

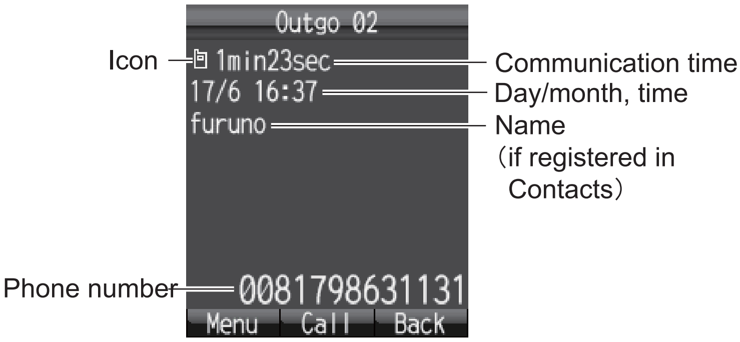
: Missed

: Communication successful

: Communication failed

Note: When there are no numbers registered in the incoming or outgoing history, "no list" appears.

2. Press ▼ or ▲ to select the number to call. **01** is the most recent number.
Note: Press the **Enter** key to view the complete information for the selected number. The incoming/outgoing call time log, etc. appear. Press the 🕮 key to return to the History list.



Outgo 02

1min23sec
17/6 16:37
furuno

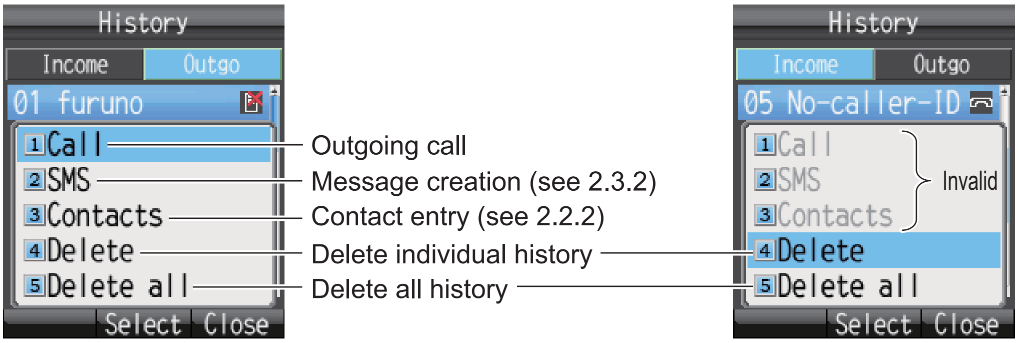
0081798631131

Menu | Call | Back

3. Press the 📞 key to dial the selected number.

Operations from the submenu of the History screen

At the incoming or outgoing history screen, press the 🔊 key to open the submenu.


History
Income
Outgo
01 furuno
1 Call
2 SMS
3 Contacts
4 Delete
5 Delete all
Select
Close
Outgoing call
Message creation (see 2.3.2)
Contact entry (see 2.2.2)
Delete individual history
Delete all history
History
Income
Outgo
05 No-caller-ID
1 Call
2 SMS
3 Contacts
Invalid
4 Delete
5 Delete all
Select
Close

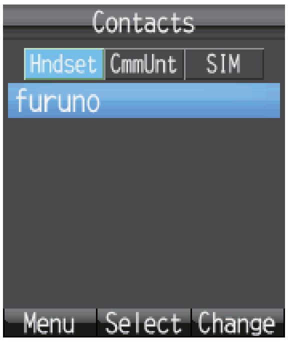
Number displayed

Number hidden

How to call from the Contacts list

The Contacts data is saved in the Communication Unit, the handset and the SIM card. For information about creating or saving a new contact, refer to section 2.2.1 or section 2.2.2, for handset, or section 5.4.1 for communication unit and SIM card.

1. At the idle screen, press the 📖 key to open the Contacts screen.

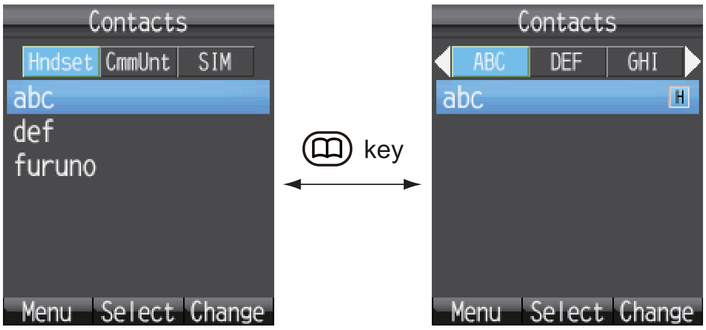

Contacts
Hndset
CmmUnt
SIM
furuno
Menu
Select
Change

Hndset: Handset
CmmUnt: Communication unit
SIM: SIM card

Note: If no numbers are stored in the Contacts list, "no list" appears.

2. Press ◀ or ▶ to select the location to view (Hndset, CmmUnt, SIM).

Note: You can switch between displays with the 📖 key.

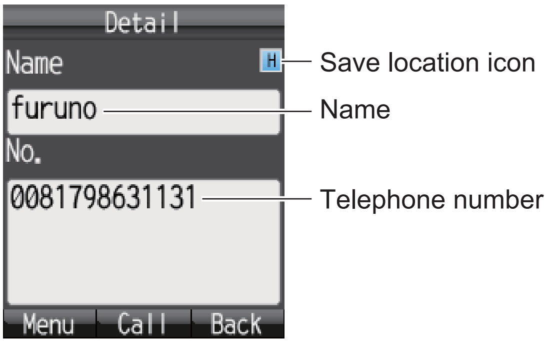

Contacts
Hndset
CmmUnt
SIM
abc
def
furuno
Menu
Select
Change
key
Contacts
ABC
DEF
GHI
abc
H
Menu
Select
Change

Save location display

All lists

H : Handset
C : Communication unit
S : SIM card

3. Press ▲ or ▼ to select a contact.
Note: Press the **Enter** key to display the complete information of the selected contact. Press the 📖 key to return to the Contacts list.


Detail
Save location icon
Name
Telephone number
Menu
Call
Back

Name
furuno
No.
0081798631131

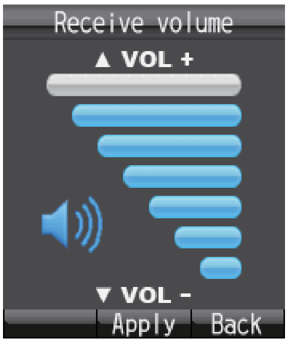
4. Press ☎ to dial the number.

2.1.2 Operation during communication

How to adjust the volume

Adjust the volume of the conversation as follows:

1. During a conversation, press ▲ or ▼ to display the Receive volume screen.

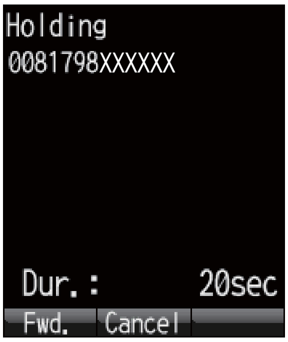

Receive volume
▲ VOL +
▼ VOL -
Apply
Back

2. Press ▲ to increase the volume, or ▼ to decrease the volume. Press the **Enter** key to set the volume or wait two seconds for the volume to set automatically.

How to put a call on hold

It is possible to put a call on hold during the conversation.

1. During a conversation, press the **Enter** key.



Holding
0081798XXXXXX
Dur.: 20sec

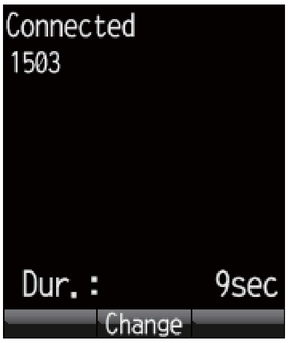
If the other party puts a call on hold during an internal call, the message "Holding by party" appears.

2. Press the **Enter** key again to take the call off hold and return to the conversation.

How to answer an incoming call during a conversation

If another call is received during conversation, perform the following:

1. To answer the call, press the ☎ key. To disregard the call, press the ⏻ key. If the call is answered, the current conversation is put on hold. If the incoming call is cancelled, the incoming caller is disconnected.
2. To switch between callers, press the **Enter** key.

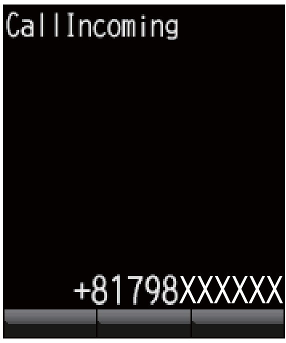


Connected
1503

Dur. : 9sec

2.1.3 How to receive a call

1. When the handset rings, release the handset from the cradle then press the ☎ key.
   If the call is from one of the subscribers described below, the name of the caller is displayed.
   - If the caller is saved in Contacts, the registered name appears.
   - If [Nickname] is set in the [Client set.] menu for a handset, the nickname of the internal telephone appears.
   - The name of the optional phone set in [Notes] of [Settings], [Basic Settings] and [Analog ports] in the Web software name appears.



CallIncoming

+81798XXXXXX

If the number is hidden, “No-caller-ID” appears.

2. Talk to caller.

3. When conversation is finished, press the ⏻ key to complete the call, or place the handset on the cradle. The communication time appears for 3 seconds and then the idle screen returns.

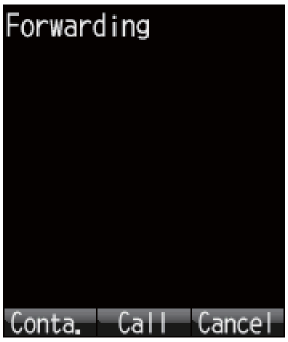
Note 1: If the called party does not answer, a notice appears. Further the missed call icon ☎ appears. (The icon appears if the missed call feature is active.)

Note 2: If the quick telephone feature is set for [Act. :OffHook], you can start your conversation as soon as you pick up the handset; it is not necessary to press the ☎ key (see section 3.5.1).

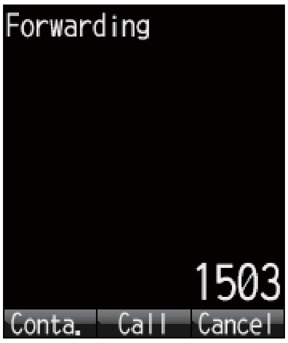
2.1.4 Call forwarding

A call can be forwarded to another internal handset.

1. During conversation, press the 🔊 key.

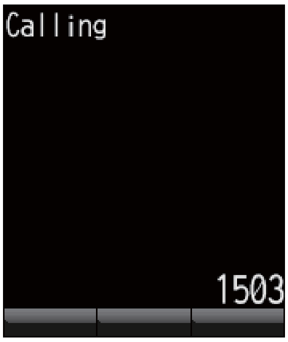


2. Enter the 4-digit internal handset number.



1503

3. Press the **Enter** key. The screen changes as follows:



1503

4. The following options are available in call forwarding:
   If the recipient answers: Inform party that you are transferring a call then press the ⏻ key. The call is forwarded.

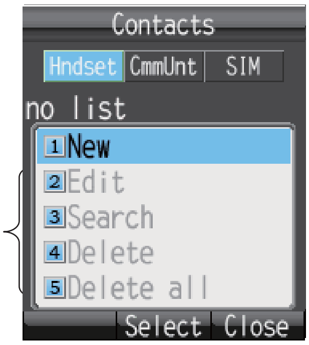
   If the recipient doesn’t answer: press the ⏻ key to go to the hold screen. Press the **Enter** key to return to restore normal operation.

2.2 Contacts List

Frequently called numbers can be saved in the Contacts list for easy access when phoning or sending an SMS. Save the Contacts list to the handset, the communication unit or the SIM card. The Handset can store 50 contacts. To commonly use a contact with multiple handsets, save it to the contact list in the communication unit or SIM card. See section 5.4.1.

2.2.1 How to add a new contact

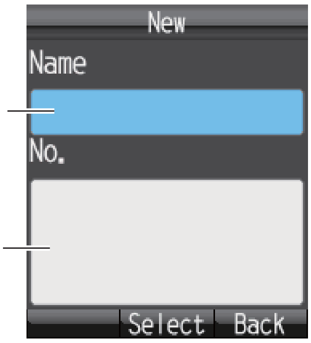
1. At the idle screen, press the 📖 key to open Contacts.
2. Press the 🔊 key to open the submenu.


Contacts
Hndset
CmmUnt
SIM
1 New
2 Edit
3 Search
4 Delete
5 Delete all
Select
Close

no list

Items appear in grey when nothing is stored on handset, comm. unit or SIM.

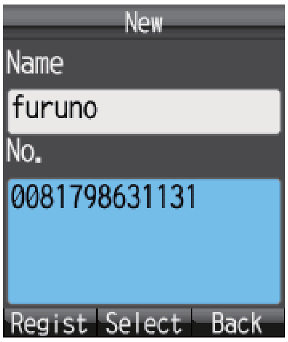
3. With [New] selected, press the **Enter** key, or press **1** to add a new entry.


New
Name
No.
Select
Back

Required input

Required input

4. With the [Name] field selected press the **Enter** key.
5. Enter name of party and press the **Enter** key. You can use a maximum of 50 characters. For how to enter data, see section 1.5.2.
6. Press ▼ to select the [No.] field then press the **Enter** key.
7. Enter the telephone number of the party then press the **Enter** key. A maximum of 20 characters can be used. The available characters are numerics, #, *, and +.


New
Regist
Select
Back

Name

furuno

No.

0081798631131

8. Press the 🔊 key. The message "Registered" appears and the contact is saved to the Contacts list in the handset.

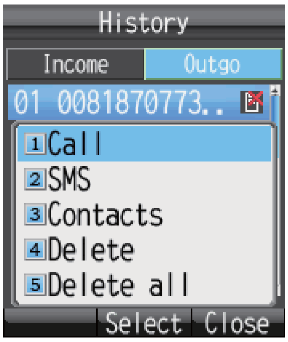
9. Press the ⏻ key to close the Contacts screen.

Note: The contacts screen can be opened with [Contacts] in the main menu.

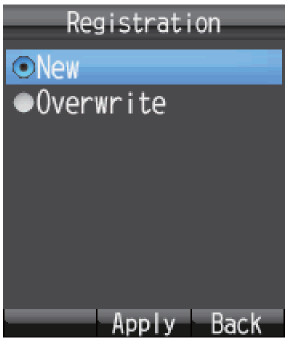
2.2.2 How to save a telephone number from History to Contacts

Save a number from the outgoing and incoming History to Contacts.

1. At the idle screen, press ◀ to open the incoming history list, or ▶ to open the outgoing history list.
2. Press ▲ or ▼ to select the contact to save.
3. Press the 🔊 key to open the submenu.



4. Press **3** to select [Contacts].



5. With [New] selected, press the **Enter** key. The telephone number selected at step 2 appears in the [No.] field.
6. With the [Name] field selected, press the **Enter** key.
7. Enter a name (max. 50 character), then press the **Enter** key.
8. Press the 🔊 key. The message "Registered." appears and the number is registered in the Contacts list. The number selected at step 2 now appears as the registered name.
9. Press the ⏻ key to close the Contacts list.

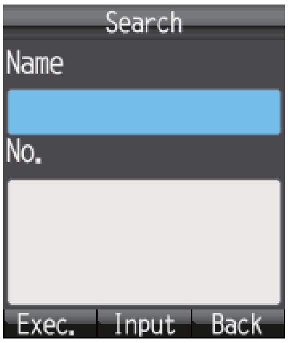
Note 1: To write over a number that already exists in the Contact list, select [Overwrite] instead of [New] at step 5 and press the **Enter** key. Select the contact to overwrite and press the **Enter** key. The new number overwrites the existing number in the [No.] field.

Note 2: To register a number entered from the idle screen to the Contacts, press the 🔊 key, then **2** to select [Save num.]. The remainder of the procedure is the same as that from step 5 in this procedure.

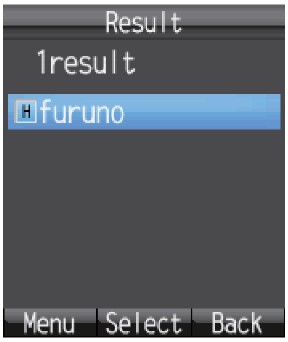
2.2.3 How to search the Contacts list

This section shows you how to search the handset, communication unit and SIM card for registered contact.

1. Press the 📖 key to open Contacts.
2. Press the 🔊 key to open the submenu.
3. Press **3** to select [Search].



4. Select the [Name] field to search by name, or the [No.] field to search by number. Press the **Enter** key.
5. Enter part of name (or telephone number) then press the **Enter** key.
6. Press the 🔊 key to perform the search. The results of the search appear on the Result screen. If the contact can not be found, the message "Not found" displays.



Note: To display all the contact data, press the 🔊 key at step 5 with nothing entered in the fields.

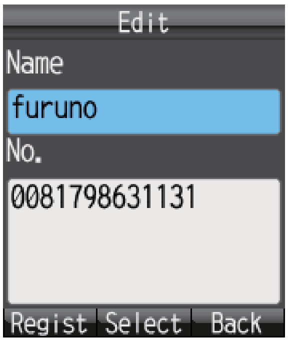
7. Do one of the following depending on your objective:
   - **Place a telephone call:** Press the 📞 key.
   - **Edit contact:** Press the 🔊 key to show the submenu. Press **2** key to select [Edit]. Start from step 5 at section 2.2.4.

- **Delete contact:** Press the 🔊 key to show the submenu. Press **3** key to select [Delete]. Press ▲ to select [Yes] then press the **Enter** key.

2.2.4 How to edit a contact

You can edit a contact from the handset in which the contact is registered. Contacts saved to the communication unit and SIM card cannot be edited from a handset (refer to 5.4.3).

1. At the idle screen, press the 📖 key to open Contacts.
2. With [Hndset] selected, press ▲ or ▼ to select the item to edit.
3. Press the 🔊 key to open the submenu.
4. Press **2** to select [Edit].



Edit

Name

furuno

No.

0081798631131

5. Edit the recipient name or number (refer to 2.2.1).
6. After you edit, press the 🔊 key.
7. Press ▼ to select [Overwrite], and press the **Enter** key. The message "Edited" appears.
8. Press the ⏻ key to close Contacts.

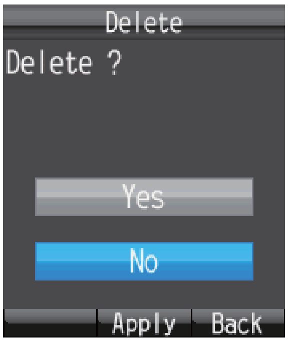
2.2.5 How to delete a contact

You can delete a contact from the handset in which the contact is registered. Contacts saved to the communication unit and SIM card cannot be deleted from a handset. The following two methods are available to delete data (refer to section 5.4.4):

- **Delete individual:** Delete the selected contact.
- **Delete all:** Delete all addresses in the Contacts list.

Delete individual contact

1. At the idle screen, press the 📖 key to open the Contacts.
2. With [Hndset] selected, press ▲ or ▼ to select the contact to delete.
3. Press the 🔊 key to open the submenu.
4. Press **4** to select [Delete].

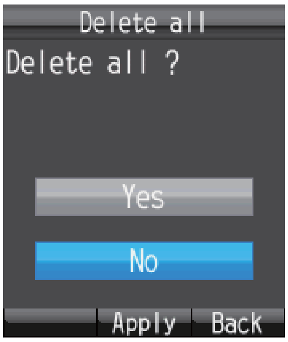


Delete ?

5. Press ▲ to select [Yes], and press the **Enter** key. The data of the contact selected at step 2 is deleted.
6. Press the ⏻ key to close Contacts.

Delete all

1. At the idle screen, press the 📖 key to open Contacts.
2. Press the 🔊 key to open the submenu.
3. Press **5** to select [Delete all]. Operation Password is required.
4. Press the **Enter** key.
5. Enter the operation password, and press the **Enter** key. For information about the operation password, see section 1.6.
6. Press ▼ to select [OK], and press the **Enter** key.



Delete all ?

7. Press ▲ to select [Yes], and press the **Enter** key.
8. Press the ⏻ key to close Contacts.

2.3 SMS

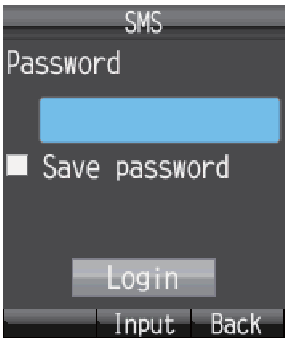
The **Short Message Service (SMS)** allows you to send and receive SMS messages to similarly equipped mobile phones and Inmarsat terminals. An SMS message can have up to 160 alphanumeric characters.

Note: Not all mobile phone carriers permit reception and transmission of SMS messages to Inmarsat terminals. Contact your mobile phone carrier for details.

2.3.1 How to log in

Log in to access the SMS menu.

1. At the idle screen, press ✉ to open the SMS menu. The following login screen appears.



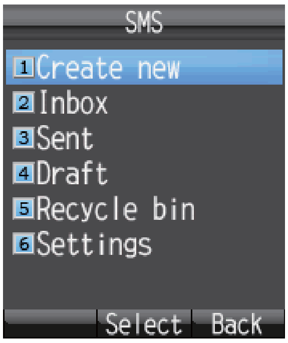
2. Press the **Enter** key.
3. Enter the SMS password and press the **Enter** key. See section 1.6 for information about the SMS password.
4. To shorten the login procedure from the next login, press ▼ to select [Save password], and press the **Enter** key.
   A checkmark [✓] appears in the checkbox. See section 3.3.2 for how to set the SMS password for login.
5. Press ▼ to select [Login], and press the **Enter** key.
   If the SMS password is correct, the [SMS] menu appears.
   Note: If the password is incorrect, the message "Incorrect password." appears. Enter the password again. In addition to the error message, the idle screen shows "Login failed" and the alarm icon ⚠ appears.

Note: Descriptions hereafter omit entry of the SMS password.

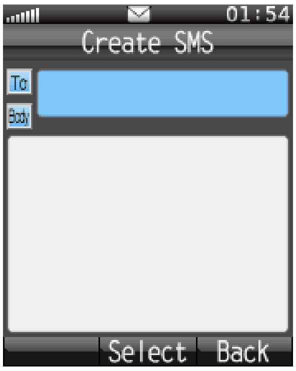
2.3.2 How to send an SMS message

You can send a message with a maximum of 160 characters (alphanumeric, symbols) to a communication terminal that has SMS capability.

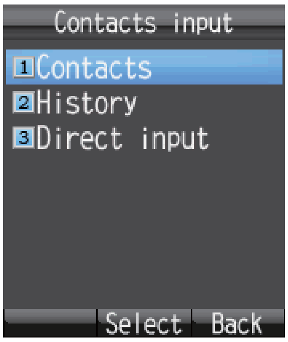
1. At the idle screen, press the ✉ key to show the [SMS] menu.


SMS
1 Create new
2 Inbox
3 Sent
4 Draft
5 Recycle bin
6 Settings
Select
Back

2. Press **1** to select [Create New].

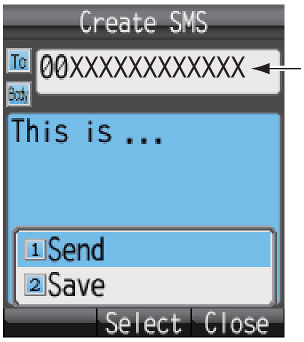

01:54
Create SMS
To
Body
Select
Back

3. With the [To] field selected press the **Enter** key.


Contacts input
1 Contacts
2 History
3 Direct input
Select
Back

4. Select from the following methods to choose a recipient:
   To get recipient from Contacts, press **1**, select contact then press the **Enter** key.
   To get recipient from outgoing History, press **2**, select subscriber then press the **Enter** key.
   To input recipient number, press **3**, enter number (up to 20 digits) then press the **Enter** key.
5. Press ▼ to select the [Body] field, and press the **Enter** key.
6. Enter the text (maximum 160 characters) in the [Body] field and press **Enter** key.

7. Press the 🔊 key to open the submenu.


Create SMS
To
00XXXXXXXXXXX
Body
This is ...
1 Send
2 Save
Select
Close

Name appears here if telephone number is registered in Contacts.

8. Press **1** to select [Send] to send the message. The message "Sending..." appears while the message is being sent. When completed, the message "Sent." appears.

   Note 1: To save a message to the [Draft] box without sending the message, press **2** instead of **1** to select [Save]. The message is saved to the [Draft] box.

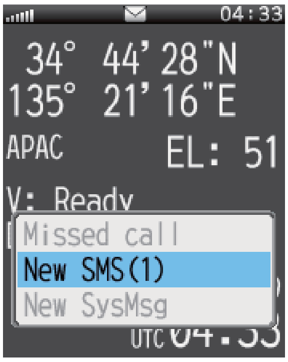
   Note 2: To cancel sending of a message while the indication "Sending..." is displayed, press 📖.

9. Press ⏻ to close the menu.

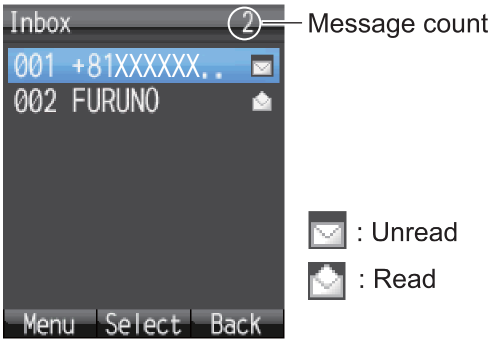
Note: The [SMS] menu can also be accessed with [SMS] on the main menu.

2.3.3 How to view a received message

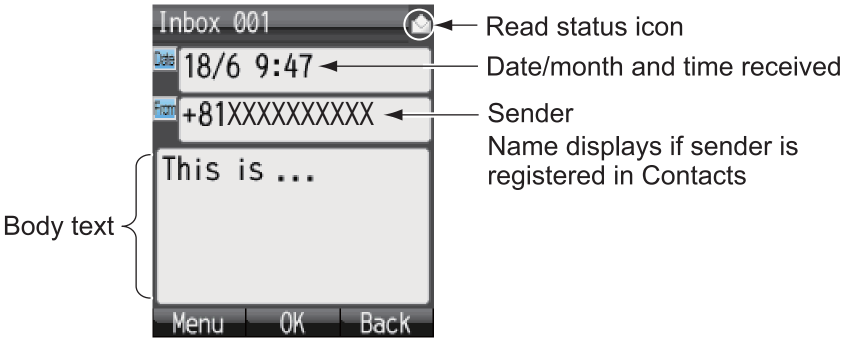
If you receive a message while logged in (with [Save password] set to on), an alarm rings and an alert window appears at the bottom of the screen as shown in the illustration below. Furthermore, the message icon ✉ appears in the status bar at the top of the screen if SMS alert is set to ON (refer to 3.5.1 for detailed information). When not logged in, neither the alert window nor the icon appears. Manually check if a new message has arrived, when you log in.


04:33
34° 44’ 28"N
135° 21’ 16"E
APAC
EL: 51
V: Ready
Missed call
New SMS(1)
New SysMsg
UTC 04:33

1. With [New SMS] selected, press the **Enter** key. The Inbox displays.


Inbox
2
001 +81XXXXXX..
002 FURUNO
Menu
Select
Back
Message count
: Unread
: Read

2. Press ▲ or ▼ to select the message, and press the **Enter** key.


Inbox 001
Date
18/6 9:47
From
+81XXXXXXXXXX
This is ...
Menu
OK
Back
Read status icon
Date/month and time received
Sender
Name displays if sender is registered in Contacts
Body text

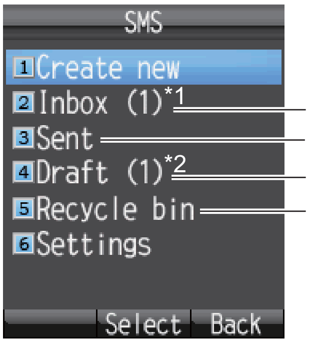
Note: After displaying the message, press the 🔊 key to display the sub menu. The following operations are possible: Reply, Forward, Call, Contacts, Move r. bin (move to Recycle Bin), Copy text. See section 2.3.5.

3. Press the ⏻ key to close the message.

2.3.4 Message boxes

There are four message boxes: [Received], [Sent], [Draft] and [Recycle Bin]. If there is no message in a box, "No SMS" is displayed. If the amount of messages exceeds the maximum storage capacity, the oldest message is deleted automatically.

Box	Saved Message	Maximum Amount
Inbox	Received messages	200 Messages in total
Sent	Sent messages	
Draft	• Un-sent saved messages. • Messages which did not reach intended recipient.	
Recycle Bin	Messages deleted from [Inbox], [Sent], and [Draft] boxes.	


SMS
1 Create new
2 Inbox (1)*1
3 Sent
4 Draft (1)*2
5 Recycle bin
6 Settings
Select
Back

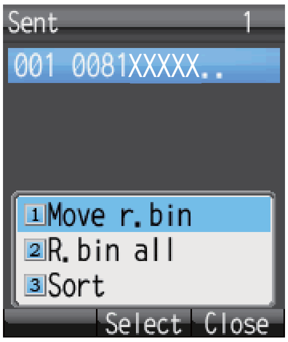
Received messages box
Sent messages box
Draft messages box
Recycle bin

*1: Unread message count displays in brackets.
*2: Unsent message count displays in brackets.

How to move a message to the recycle bin

You can move the messages from any box into the Recycle Bin. Messages can be moved individually or all at once.

1. Open the [Inbox], [Sent] box or [Draft]. To move an individual message, go to step 2. To move all messages from the selected box, go to step 3.
2. Press ▲ or ▼ to select the message to send to the Recycle Bin.
3. Press the 🔊 key to open the submenu.


Sent 1
001 0081XXXXX..
1 Move r.bin
2 R.bin all
3 Sort
Select
Close

4. To move an individual message to the Recycle Bin, press the **1** key to select [Move r. bin]. To move all messages from the selected box to the Recycle Bin, press the **2** key to select [R. bin all]. The message "Moving..." appears during the moving. "Moved" appears when the move is completed.
5. Press the ⏻ key to close the box.

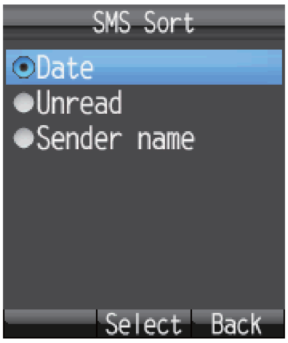
Note: To move a message to the recycle bin that is opened and being viewed, press the 🔊 key and **5** to select [Move r. bin].

How to sort messages in a box

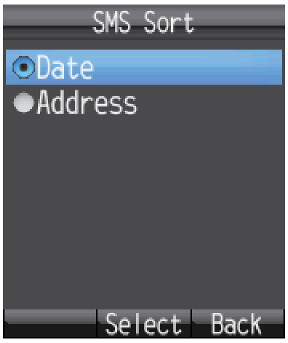
You can sort the messages in the Inbox by date, read/unread status or by sender name. Further, you can arrange messages in the Sent and Draft boxes by either date or recipient name.

1. Open the box ([Inbox], [Sent], or [Draft]) to arrange.
2. Press the 🔊 key to open the submenu.

3. Press **3** to select [Sort].


SMS Sort
⦿Date
●Unread
●Sender name
Select
Back

Inbox


SMS Sort
⦿Date
●Address
Select
Back

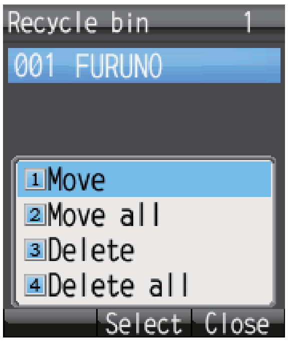
Sent box/Draft box

4. Press ▲ or ▼ to select sort method.
   Date: Sort messages by date received, sent, or created.
   Unread: Sort messages by unread/read status.
   Sender name: Sort messages by sender name (A-Z), number (0-9), and symbol. Senders that are not saved in Contacts display at the top of the list.
   Address: Sort messages by address name (A-Z), number (0-9) and symbol. Recipients that are not saved in Contacts display at the top of the list.
5. Press the **Enter** key.
6. Press the ☎ key to close the mailbox.

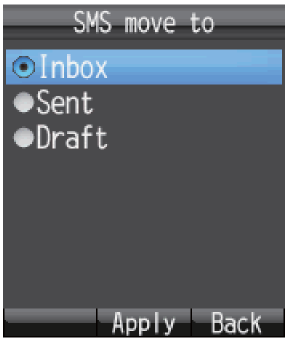
How to move messages from the recycle bin to other boxes

Messages in the Recycle Bin can be moved to the other boxes. You can move messages individually or all at once.

1. Open the Recycle Bin. For individual message go to step 2; for all messages go to step 3.
2. Press ▲or ▼ to select the message to send to another box.
3. Press the 🔊 key to open the submenu.


Recycle bin 1
001 FURUNO
1 Move
2 Move all
3 Delete
4 Delete all
Select
Close

4. To move an individual message, press **1** to select [Move]. To move all messages, press the **2** key to select [Move all].



5. Press ▲ or ▼ to select the box where to move the message, and press the **Enter** key. The message "Moving..." appears during the move and "Moved." when the move is completed.
6. Press the ☎ key to close menu.

Note: You can move a message in the Recycle Bin that is opened and being viewed to another box. Press the 🔊 key, and **1**(Move).

How to delete messages in the recycle bin

The messages in the Recycle Bin can be deleted individually or all at once.

1. Open the Recycle Bin. To delete an individual message, go to step 2. To delete all messages, go to step 3.
2. Press ▲ or ▼ to select the message to delete.
3. Press the 🔊 key to open the submenu.
4. To delete an individual message, press **3** (Delete). To delete all messages, press **4** (Delete all). Then, do as follows:
   - If **3**, press ▲ to select [Yes] and press the **Enter** key.
   - If **4**, press the **Enter** key. Enter the operation password and press the **Enter** key. Press ▼ to select [OK] and press the **Enter** key. Press ▲ to select [Yes] and press the **Enter** key.
     The message "Deleting..." appears during the deleting process and “Deleted” appears upon completion.
5. Press the ☎ key to close menu.

   Note: You can delete messages when the Recycle Bin is opened and being viewed. Press the 🔊 key, followed by **2** (Delete).

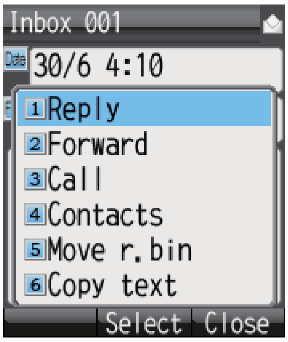
2.3.5 How to use Received messages

Received messages can be replied to and forwarded. You can also use received messages to telephone the sender of the message, add a sender to Contacts, and copy the text of the message.

How to reply to a message

Do the procedure below to reply to a received message.

1. Open the Inbox and select the message to reply to.
2. Press the 🔊 key to open the sub menu.



3. Press **1** to select [Reply]. The Create SMS screen appears.
4. Press ▼ to select the [Body] field, and press the **Enter** key.
5. Enter the text (maximum 160 characters). Press the **Enter** key when finished.
6. Press the 🔊 key to open the submenu.
7. Press **1** to select [Send] to send the message.
8. Press the ⏻ key to close the submenu.

How to forward a message

Forward a received message to another recipient as follows:

1. Open the Inbox and select the message to forward.
2. Press the 🔊 key to open the sub menu.
3. Press **2** to select [Forward].
4. With the [To] field selected press the **Enter** key.
5. Enter the address of the recipient and press the **Enter** key. (See section 2.3.2.)
6. Press the 🔊 key to open the submenu.
7. Press **1** to select [Send] to send the message.
8. Press the ⏻ key to close the menu.

How to call the sender of a message

Call the sender of a received SMS as follows:

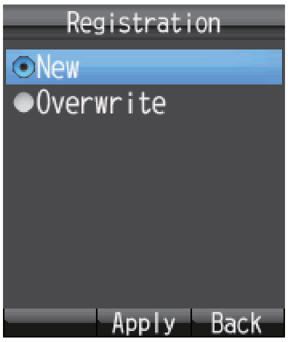
1. Open the Inbox and select the message to call sender from.
2. Press the 🔊 key to open the submenu.

3. Press **3** to select [Call]. The phone number of the sender appears.
4. Press the ☎ key, or the **Enter** key, to call the number.
5. Press the ⏻ key to close the menu.

How to save the sender to Contacts

Save the address of a sender to Contacts as follows:

1. Open the Inbox and select the message to save sender.
2. Press the 🔊 key to open the sub menu.
3. Press **4** to select [Contacts].



4. With [New] selected, press the **Enter** key. The phone number of the sender appears in the [No.] field.
5. With [Name] selected press the **Enter** key.
6. Enter the name (maximum of 50 characters) of the sender, and press the **Enter** key.
7. Press the 🔊 key. The message "Registered" appears and the name is saved to the Contacts list, under the name entered at step 6.
8. Press the ⏻ key to close the menu.

How to copy text

You can copy text in a message as follows:

1. Open the message from which to copy text.
2. Press the 🔊 key to open the submenu.
3. Press **6** to select [Copy text].
4. Position the cursor at the beginning of the text to copy and press the **Enter** key.
5. Move the cursor to highlight the text to copy then press the **Enter** key.
6. Press the ⏻ key to close the menu.

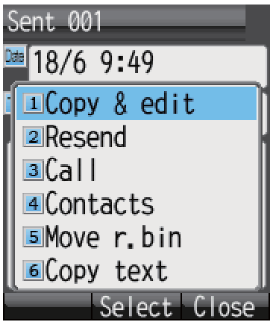
2.3.6 How to use Sent messages

Messages in the Sent box can be edited and re-sent. You can also use sent messages to telephone the sender of a message, add a sender to Contacts and copy text of a message.

How to edit and send a message

Messages in the Sent box can be edited and sent to the same or different recipient.

1. Open the Sent box and choose the message.
2. Press the 🔊 key to open the sub menu.



3. Press **1** to select [Copy & edit]. The [Create SMS] screen appears with the original message text in the [Body] field. To edit and send a message to the original recipient, go to step 6. To send the message to a different recipient go to step 4.
4. To send the message to a different recipient, with [To] selected, press the **Enter** key.
5. Select the recipient. See section 2.3.2.
6. Press ▼ to select the [Body] field, and press the **Enter** key.
7. Edit the body text (maximum 160 characters) and press the **Enter** key.
8. Press the 🔊 key to open the submenu.
9. Press **1** to select [Send] to send the message.
10. Press the ☎ key to close the box.

How to resend messages

You can resend a message that was already sent.

1. Open the Sent box and select the message.
2. Press the 🔊 key to open the submenu.
3. Press **2** to select [Resend] to resend the message.
4. Press the ☎ key to close the box.

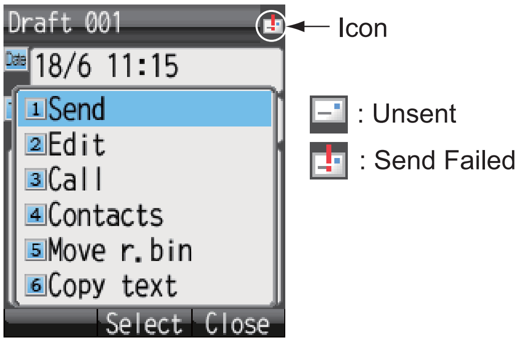
2.3.7 How to use Draft messages

Un-sent messages, and failed transmission messages are saved in the Draft box. It is possible to edit, resend, copy text, telephone the sender, and save address to Contacts.

How to edit and send messages

Edit and send a message in the Draft box as follows:

1. Open the Draft box and select the message to edit and/or send.
2. Press the 🔊 key to open the sub menu.


Draft 001
18/6 11:15
1 Send
2 Edit
3 Call
4 Contacts
5 Move r.bin
6 Copy text
Select
Close
Icon
: Unsent
: Send Failed

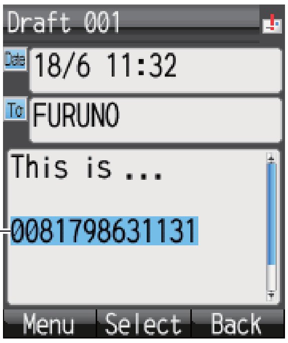
3. To edit the message, press **2** to select [Edit]. To send the message without editing, press **1** to select [Send]. If **2** is selected, the [Create SMS] screen appears. Follow directions from step 4. If **1** already has been pressed, follow directions at step 7.
4. Edit the message text.
5. Press the 🔊 key to open the submenu.
6. Press **1** to select [Send] to send the message.
7. Press the ☎ key to close the menu.

2.3.8 How to use URL and phone numbers within messages

If a phone number is included in a message, it can be copied, called, replied to (by SMS), and added to Contacts. If a URL is included in a message, it can be viewed, added to Favorites, and copied.

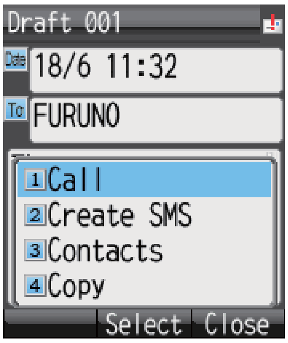
Phone numbers

1. Open the message with the included phone number.
2. Press ▼ to select the phone number with the cursor. The phone number is highlighted in light blue. If there are two or more numbers in the message, use ▼ or ▲ to select the one to use.


Draft 001
18/6 11:32
FURUNO
This is ...
0081798631131

Characters which are recognized as telephone number

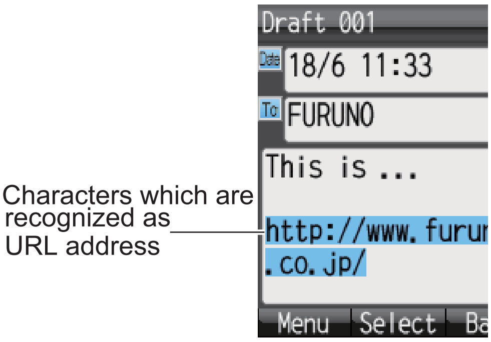
3. Press the **Enter** key to show the submenu.


Draft 001
18/6 11:32
FURUNO

4. Do one of the following:
    - **Call the selected number:** Press **1**. Press the **Enter** key or the ☎ key to call.
    - **Send an SMS message to the selected number:** Press **2**. Follow the instructions at step 5 and after in section 2.3.2.
    - **Save the selected number to Contacts:** Press **3**. Follow the instructions at step 4 and after of “How to save the sender to contacts”.
    - **Copy the selected number**: Press **4** to copy the number to the clipboard.
5. Press the ⏻ key to close the menu.

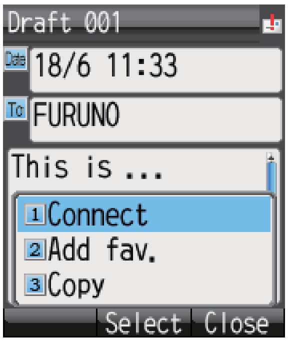
URL

1. Open the message with the included URL.
2. Press ▼ to select the URL. The URL is highlighted in light blue.



Draft 001
18/6 11:33
FURUNO
This is ...
http://www.furun
.co.jp/

3. Press the **Enter** key to display the submenu.



Draft 001
18/6 11:33
FURUNO
This is ...

4. The following operations are possible:
   - **Open and view the URL:** Press **1**. Press ▲ to select [Yes] and press the **Enter** key. If the idle screen shows "D: Connected", the web page related to the URL appears (see section 2.4.1). If "D: Not connected" (or “No permission”) is shown, an error message appears and the web page is not shown.
   - **Save the URL to Favorites:** Press **2**. With the [Title] field selected, press the **Enter** key. Enter a title in the field and press the **Enter** key. Press the 🔊 key to save to Favorites.
   - **Copy the URL:** Press **3**. The URL is copied to the clipboard.
5. Press the ⏻ key to close the menu.

2.4 Web

You can view web pages on the handset by using Standard IP (Best effort) packet communications service. Service charge is based on the amount of data volume, not connection time.

Note: The handset can start from Standard IP packet service. However, when using Streaming IP data packet service with the Web Software, the handset uses streaming IP service. The charge for Streaming IP service is based on connection time, so it is not advised to view web pages from the handset. Disconnect from the internet and re-connect to use Standard IP. Refer to section 2.4.1.

2.4.1 How to connect/disconnect to/from the Internet

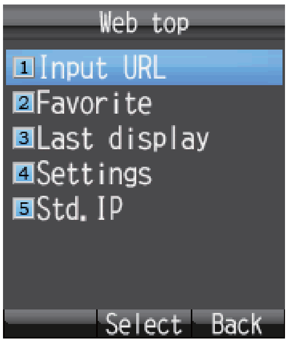
Note: If the IP address of the handset is not set by web software (the standby display shows “D: No permission”), you cannot connect to the internet. See page 6-17.

How to connect to the Internet

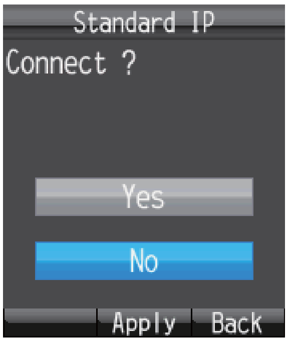
If you are already connected to the Internet via the Web software (Idle screen displays "D: Connected"), the following procedure is NOT necessary.

Do the following to connect to the Internet:

1. At the idle screen, press the 🌐 key to open the [Web top] menu.


Web top
1 Input URL
2 Favorite
3 Last display
4 Settings
5 Std. IP
Select
Back

2. Press **5** to select [Std. IP].


Standard IP
Yes
No
Apply
Back

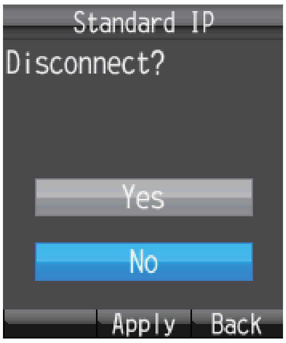
Connect ?

3. Press ▲ to select [Yes], and press the **Enter** key. While connecting, the message "Connect..." appears. When connected, the message "Completed." is displayed. **Note:** If connection cannot be established, the message "Failed." appears.
4. Press the **Enter** key.
5. Press ▼ to select [OK], and press the **Enter** key.
6. Press the ⏻ key to close the menu. The idle screen now displays "D: Connected".

How to disconnect from the internet

Do the following to disconnect from the internet. This operation disconnects all service types (Standard IP Packet, Streaming IP packet).

1. At the idle screen, press the 🌐 key to open the [Web top] menu.
2. Press the **5** key to select [Std. IP]. The following screen appears.



Standard IP

Disconnect?

3. Press ▲ to choose [Yes], and press the **Enter** key. While disconnecting, the message "Disconnect..." appears and the message "Completed." appears when disconnection is completed.
4. Press the **Enter** key.
5. Press ▼ to select [OK], and press the **Enter** key.
6. Press the ☎ key to close the menu. The idle screen now displays "D: Not connected".

2.4.2 How to view a web page

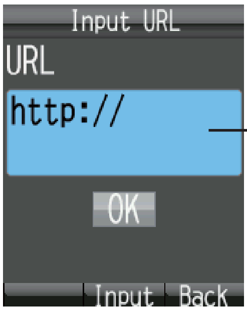
There are four ways to view a web page:

- Direct input of URL
- Use Input history
- Select URL from Favorites
- Use last-displayed URL

Confirm that the idle screen shows "D: Connected" then do the procedure shown below. If "D: Not connected" (or “D: No permission”) appears an error message appears and the web page is blank.

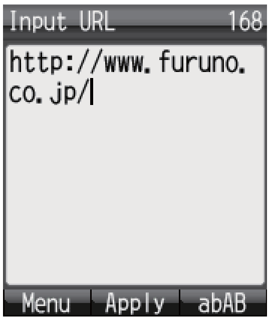
Direct input of URL

1. At the idle screen, press the 🌐 key to open the [Web top] menu.
2. Press **1** to select [Input URL].


Input URL
URL
http://
OK
Input
Back

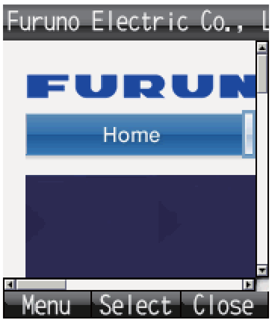
Most recently input URL appears here.

3. Press the **Enter** key to show the URL input screen.
4. Enter the URL address (maximum 192 characters), and press the **Enter** key. Any character, except a space, can be entered. If the most recently accessed web address appears in the field, press the **CLR** key to erase.

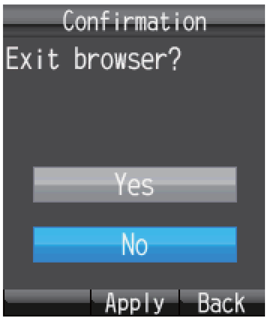

Input URL
168
Menu
Apply
abAB

http://www.furuno.co.jp/

5. Press ▼ to choose [OK], and press the **Enter** key. The URL web page appears in the web browser. Use the [Web settings] menu to adjust the display for easy viewing. Refer to section 3.4.


Furuno Electric Co., L
FURUN
Home
Menu
Select
Close

6. Press the ☎ key to close the browser.


Confirmation
Exit browser?
Yes
No
Apply
Back

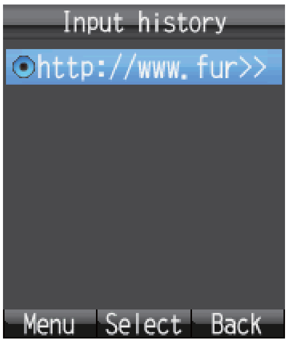
7. Press ▲ to select [Yes], and press the **Enter** key.

Note: You remain connected to the internet even if the browser is closed. See section 2.4.1for how to disconnect from the internet.

How to open a URL from the Input history screen

This procedure is invalid if the input history is empty.

1. At the idle screen, press the 🌐 key to open the [Web top] menu.
2. Press **1** to select [Input URL].
3. Press the 🔊 key to show the submenu.
   Previously input URLs (maximum 10) are shown. When the 11th URL is added, the oldest URL is automatically deleted.

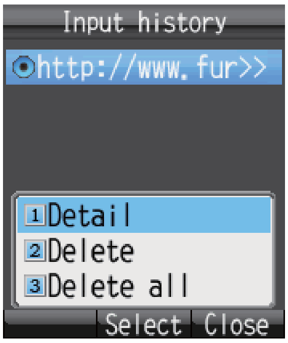


4. Press ▲ or ▼ to select a URL.

   Note: You can show the complete URL for the selected URL by pressing 🔊 , then 1, to select [Detail]. Press the 📖 key to return to the Input history screen.
5. Press the **Enter** key. Selected URL appears in the [URL] field.
6. Press ▼ to select [OK], and press the **Enter** key. The web page appears.
7. Press the ⏻ key to close the browser.
8. Press ▲ to select [Yes], and press the **Enter** key.

How to delete a URL from the history

1. Open the history. Go to step 2 to delete individual URL, or step 3 for all URLs.
2. Press ▲ or ▼ to select the URL to delete.
3. Press the 🔊 key to show the submenu.



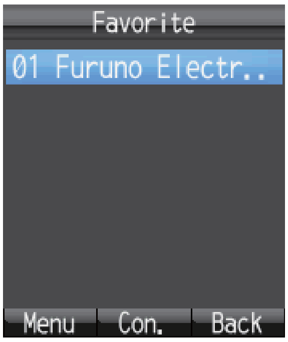
4. To delete individual URL, press **2** to select [Delete]. To delete all URLs, press **3** to select [Delete all]

5. Press ▲ to select [Yes] then press the **Enter** key.

How to view URL from the Favorite list

If there are no items on the Favorite list, the message "no list" displays, and the following procedure is invalid.

1. At the idle screen, press the 🌐 key to open the [Web top] menu.
2. Press **2** to select [Favorite] to show the Favorite list (maximum 10 favorites).



3. Press ▲ or ▼ to select the title.

   Note: With the title selected, press the 🔊 key, then **1**(Det./Edit), to show the detailed information screen. The title and the URL appear. Press the 🔊 key to edit the title and the URL. Press the 📖 key to return to the Favorite list.
4. Press the **Enter** key. The web page appears.
5. Press the ⏻ key to close the browser.
6. Press ▲ to select [Yes] and press the **Enter** key.

How to view most recent web page

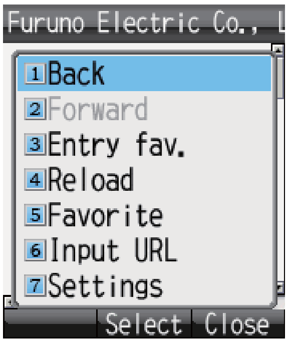
Data from the most recently viewed web page is temporarily saved to the memory, called a “cache”. When viewing the same web page again, the data saved in the cache appears. If there is no data in the cache, the following operation is not possible.

1. At the idle screen, press the 🌐 key to open the [Web top] menu.
2. Press **3** to select [Last display]. The most recently viewed web page appears.
3. Press the ⏻ key to close the browser.
4. Press ▲ to select [Yes], and press **Enter** key.

2.4.3 Operations while viewing a web page

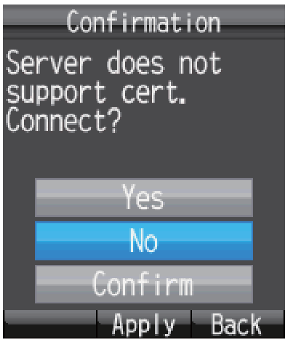
While viewing a web page, press the 🔊 key to open the submenu. The following operations are available:

- **1** (Back): Return to previous web page (if data is in cache).
- **2** (Forward): Advance to next web page (if data is in cache).
- **3** (Entry fav.): Save current page to Favorite list.
- **4** (Reload): Reload the current web page.
- **5** (Favorite): Display the Favorite list.
- **6** (Input URL): Manually enter a URL.
- **7** (Settings): Display the [Web settings] menu (see section 3.4).


Furuno Electric Co., L
1 Back
2 Forward
3 Entry fav.
4 Reload
5 Favorite
6 Input URL
7 Settings
Select
Close

About HTTPS sites

If connecting to HTTPS site, the following screen is shown.

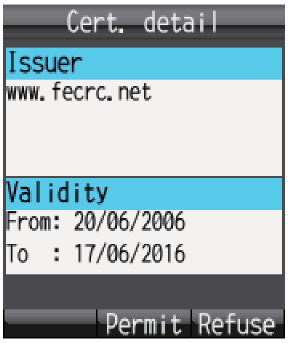

Confirmation

Server does not support cert. Connect?

Yes
No
Confirm
Apply
Back

Select from the following choices, and press the **Enter** key to select.

- **Yes**: Authenticate the server certificate and display the https site.
- **No**: Do not authenticate the server certificate and close the pop-up screen.
- **Confirm**: Show the server certification details. Press the **Enter** key to authenticate, or the 📖 key to refuse.


Cert. detail

Issuer
www.fecrc.net

Validity
From: 20/06/2006
To : 17/06/2016

Permit
Refuse

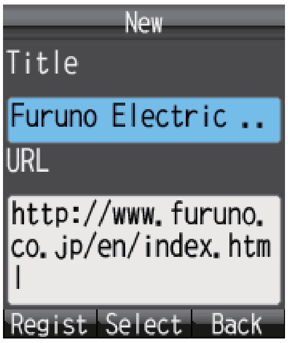
2.4.4 Favorite list

How to add a URL to the Favorite list while viewing the list

Add often-accessed web pages to the Favorite list for easy viewing. The Favorite list stores 10 URLs. Do the following to register pages to the favorite list:

Note: If there are already 10 pages in the Favorite list, it is not possible to add another without deleting one.

1. While viewing a web page, press the 🔊 key to open the submenu.
2. Press **3** to select [Entry fav.]. The title and URL of the web page appear in the [Title] and [URL] fields as shown below. For websites that are not in alphanumeric characters, the title must be manually entered. Go to step 3.



New

Title

Furuno Electric ..

URL

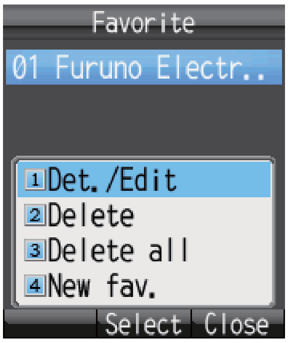
http://www.furuno.co.jp/en/index.htm

3. Select the [Title] field and press the **Enter** key.
4. Enter the title in alphanumeric characters and press the **Enter** key (max. 50 characters).
5. Press the 🔊 key. The message "Registered" appears and the URL is registered to the Favorite list.
6. Press the ⏻ key to close the browser.
7. Press ▲ to select [Yes], and press the **Enter** key.

How to delete an item from the Favorite list

You can delete one item, or all items, from the Favorite list as follows:

1. Open the Favorite list. To delete one item, go to step 2, and to delete all items, go to step 3.
2. Press ▲ or ▼ to select the item to delete.
3. Press the 🔊 key to open the submenu.


Favorite
01 Furuno Electr..
1 Det./Edit
2 Delete
3 Delete all
4 New fav.
Select
Close

4. To delete one item, press **2** (Delete). To delete all items, press **3** (Delete all).
   - For **2**: Press ▲ to select [Yes] and press the **Enter** key.
   - For **3**: Press the **Enter** key. Enter the operation password and press the **Enter** key. Press ▼ to select [OK] and press the **Enter** key. Press ▲ to select [Yes], and press the **Enter** key.
5. Press the ⏻ key to close the Favorite list.

This page is intentionally left blank.

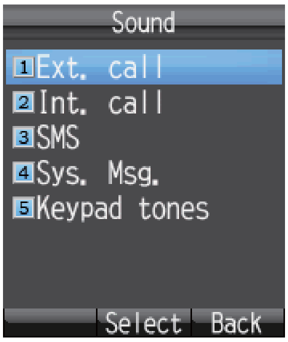
3. SETTINGS FOR HANDSET

This chapter describes the menus [Sound], [Display], [SMS], [Web], and [Settings]. Also described are system messages from connected equipment, list of connected equipment, and how to display various information.

3.1 Sound Menu

The [Sound] menu sets options for internal and external phones, message notification for SMS messages and system messages, and key beep.

1. At the idle screen, press the **Enter** key to show the main menu.
2. Press ▶ to select the [Sound] icon, and press the **Enter** key to show the [Sound] menu.



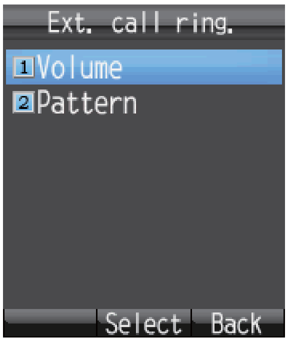
Note: The [Sound] menu can also be opened by pressing the 🔊 key at the idle screen.

3.1.1 Notification sound setting

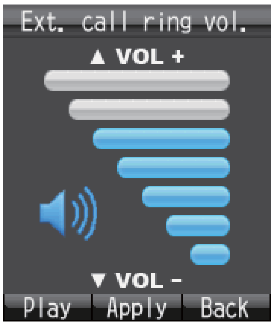
You can set the sound volume and ring pattern for internal and external phones and notification for SMS messages and system messages.

How to set the volume

1. In the [Sound] menu, press either the **1**, **2**, **3**, or **4** key for the following items:
   1: External phone incoming notification volume
   2: Internal phone incoming notification volume
   3: SMS message notification volume
   4: System message notification volume



2. Press **1** to select [Volume] to show the following.


Ext. call ring vol.
▲ VOL +
▼ VOL –
Play
Apply
Back

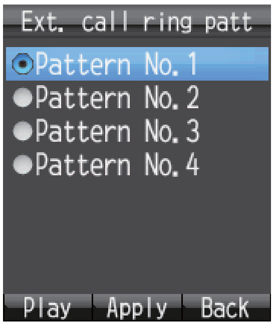
3. Press ▲ or ▼ to adjust the volume level (0 - 7). Set to [0] for no sound.

   Note: Press the 🔊 key to hear the ringtone at the selected volume. Press the 🔊 key again to stop the sound.

4. Press the **Enter** key.
5. Press the ⏻ key to close the menu.

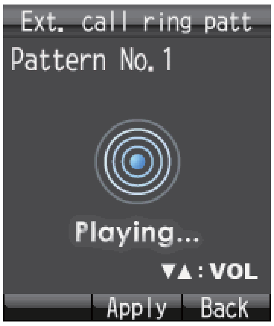
How to set the ring pattern

1. In the [Sound] menu, press either the **1**, **2**, **3**, or **4** key for the following:
   1: External phone incoming notification pattern
   2: Internal phone incoming notification pattern
   3: SMS message notification pattern
   4: System message notification pattern
2. Press **2** to select [Pattern] to show the pattern selection screen.


Ext. call ring patt
◉Pattern No.1
●Pattern No.2
●Pattern No.3
●Pattern No.4
Play
Apply
Back

3. Press ▲ or ▼ to select the pattern.

   Note: Press the 🔊 key to play the pattern at the selected pattern. Press ▲ or ▼ to adjust the volume, from 1 - 7 and off.Press the 📖 key to stop.


Ext. call ring patt
Pattern No.1
Playing...
▼▲: VOL
Apply
Back

4. Press the **Enter** key.
5. Press the ⏻ key to close the menu.

3.1.2 How to turn on/off keypad tones

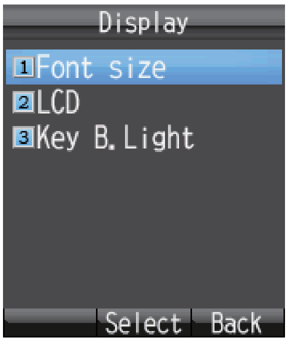
Turn the keypad tones on or off.

1. In the [Sound] menu, press **5** to select [Keypad tones].
2. Press ▲ or ▼ to select [ON] or [OFF].
3. Press the **Enter** key.
4. Press the ☎ key to close the menu.

3.2 Display Settings

Change font size, LCD backlight, and key backlight from the [Display] menu.

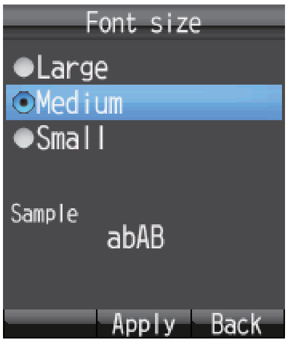
1. At the idle screen, press the **Enter** key to open the main menu.
2. Press ◀ to select the [Display] icon, and press the **Enter** key to shown the [Display] menu.


Display
1 Font size
2 LCD
3 Key B.Light
Select
Back

3.2.1 How to change the font size

Select the font size to other than that selected for web page.

1. In the [Display] menu, press **1** to select [Font size] to show the Font size screen.


Font size
● Large
◉ Medium
● Small
Sample
abAB
Apply
Back

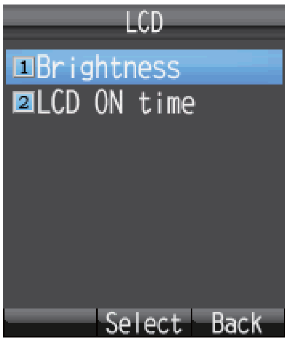
2. Press ▲ or ▼ to select font size ([Large], [Medium] or [Small]). The font size is shown in the [Sample] area.
3. Press the **Enter** key.
4. Press the ☎ key to close the menu.

3.2.2 How to change LCD brightness and backlight ON time

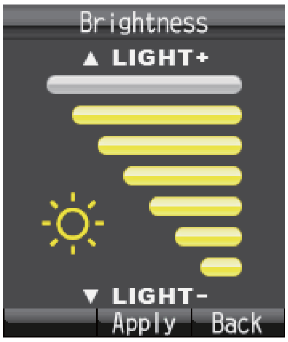
Change the LCD brightness and backlight ON time as follows:

Brightness

1. In the [Display] menu, press **2** to select [LCD] to show the [LCD] menu.


LCD
1 Brightness
2 LCD ON time
Select
Back

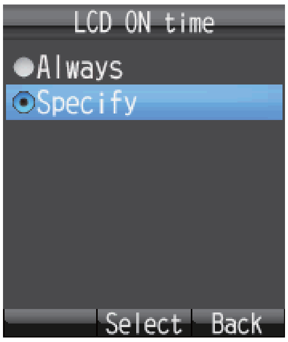
2. Press **1** to select [Brightness] to show the brightness level screen.


Brightness
▲ LIGHT+
▼ LIGHT-
Apply
Back

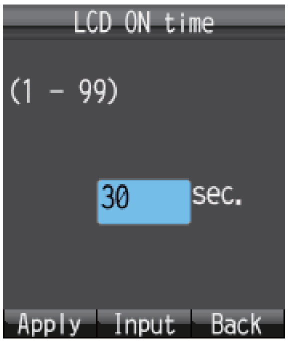
3. Press ▲ or ▼ to increase / decrease the LCD brightness level.
4. Press the **Enter** key.
5. Press the ☎ key to close the menu.

LCD Backlight ON time

1. In the [Display] menu, press **2** to select [LCD] to show the [LCD] menu.
2. Press **2** to select [LCD ON time] to show the [LCD ON time] screen.


LCD ON time
● Always
⊙ Specify
Select
Back

3. Press ▲ or ▼ to select either [Always] or [Specify] and press the **Enter** key.
   [Always]: Keep the LCD light always on. Go to step 6. **[Specify]**: Enter a time limit for the backlight. If there is no key operation during the time limit, the LCD backlight automatically turns off. Go to step 4.



LCD ON time

(1 - 99)

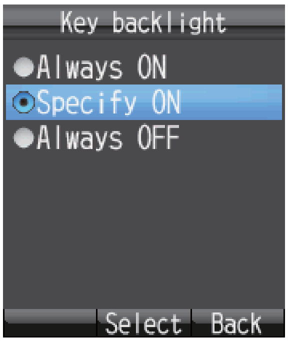
30 sec.

4. If you selected [Specify] at step 3, press the **Enter** key and enter a time limit (1 - 99 sec.), and press the **Enter** key. The time is set.
5. Press the 🔊 key.
6. Press the ⏻ key to close the menu.

3.2.3 How to adjust the keypad backlight

Change the keyboard backlight settings.

1. In the [Display] menu, press **3** to select [Key B.Light] to show the [Key backlight] screen.



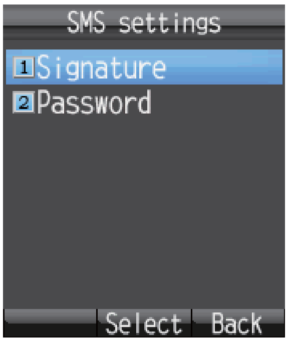
2. Press ▲ or ▼ to select one of the following and press the **Enter** key.
   [Always ON]: The keyboard backlight is always illuminated. Go to step 6.
   [Specify ON]: The keyboard backlight stays illuminated for the set time. Go to step 3.
   [Always OFF]: The keyboard backlight is not illuminated. Go to step 6.
3. Press the **Enter** key, and the character input screen appears.
4. Enter illumination time (1 -99 sec.) and press the **Enter** key.
5. Press the 🔊 key.
6. Press the ⏻ key to close the menu.

3.3 SMS Settings

You can change your signature and password settings in the [SMS Settings] menu.

1. At the idle screen, press the **Enter** key to open the main menu.

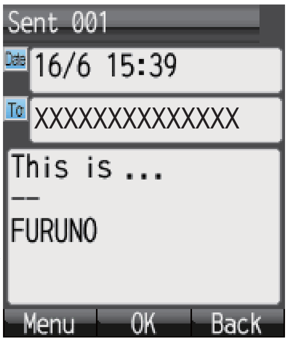
   Note: The [SMS] menu can also be opened by pressing the ✉ key at the idle screen.
2. Press ▲ to select the [SMS] icon and press the **Enter** key to show the [SMS] screen.
3. Press **6** to select [Settings] to open the [SMS settings] menu.



3.3.1 How to set an SMS Signature

An SMS signature is a line of text that is added to the end of all outgoing messages. To add a signature to all outgoing messages, do the following:

1. In the [SMS Settings] menu, press **1** to select [Signature].
2. Press ▲ or ▼ to select [ON] or [OFF] and press the **Enter** key.
   [ON]: A signature is automatically added to all SMS messages (go to step 3).
   [OFF]: A signature is not automatically added to SMS messages (go to step 4).
3. Enter the signature text (maximum 156 characters) and press the **Enter** key. For example, if “FURUNO” is entered as the signature, the screen looks like the one shown below.


Sent 001

Date 16/6 15:39

To XXXXXXXXXXXXXX

This is ...
--
FURUNO

Signature appears after message text

4. Press the ☎ key to close the menu.

3.3.2 How to activate the SMS password

To activate the SMS password, do as follows.

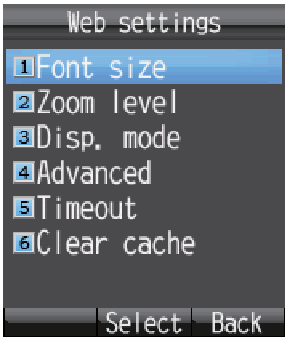
1. In the [SMS settings] menu, press **2** to select [Password].
2. Press ▼ to select [Save password].
3. Press the **Enter** key to delete the checkmark [✓] from the checkbox.
4. Press the 🔊 key.
5. Press the ☎ key to close the menu.

After this, the SMS password is requested when you access the [SMS] menu.

3.4 Web Settings

The [Web settings] menu allows you to set features of the Web browser: font size, display zoom, display mode, advanced settings, time out, and clear the cache. To access the [Web settings] menu do the following:

1. At the idle screen, press the **Enter** key to open the main menu.
2. Press ▲, then ◀ to select the [Web] **icon** and press the **Enter** key to show the [Web top] menu.
   Note: You can also show the [Web top] menu at the idle screen by pressing the press the 🌐 key.
3. Press **4** to select [Settings] to display the [Web settings] menu.



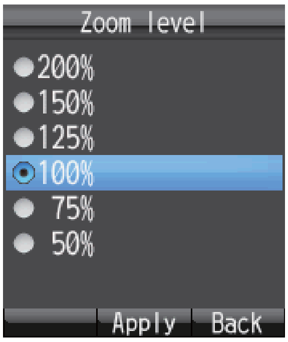
3.4.1 How to change web browser font size

1. In the [Web settings] menu, press **1** to select [Font size].
2. Press ▲ or ▼ to select font size ([Large], [Medium], [Small]). The font size is shown in the [Sample] area.
3. Press the **Enter** key.
4. Press the ☎ key to close the menu.

3.4.2 How to change web page display zoom

You can change the display zoom factor to enlarge small print.

1. In the [Web settings] menu, press **2** to select [Zoom level] to show the[Zoom level] screen.

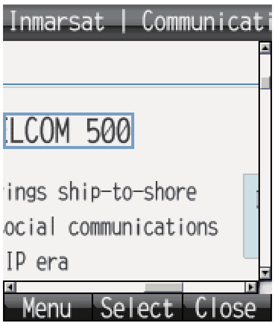

Zoom level
○ 200%
○ 150%
○ 125%
● 100%
○ 75%
○ 50%
Apply
Back

2. Press ▲ or ▼ to select a zoom level.
3. Press the **Enter** key.
4. Press the ☎ key to close the menu.

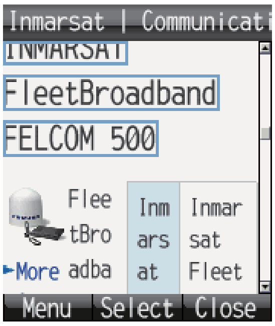
3.4.3 How to change web display mode

Display mode gives three different ways to display web pages:

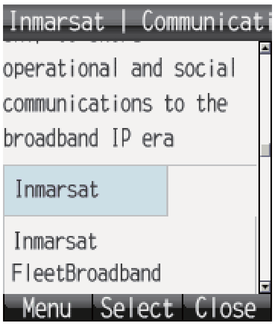
- **[Normal]**: Display the web page at normal size (you need to scroll right and left to view).
- **[Just-fit]**: The width of the web page including tables is shrunk to fit the screen width.
- **[Smart-fit]**: The width of the web page is shrunk to fit the width of the screen. A table that is larger than the width of the display is split vertically.


Inmarsat | Communicati
LCOM 500
ings ship-to-shore
ocial communications
IP era
Menu
Select
Close

Normal


Inmarsat | Communicati
INMARSAT
FleetBroadband
FELCOM 500
FleetBroadba
More
Inmarsat
Inmarsat Fleet
Menu
Select
Close

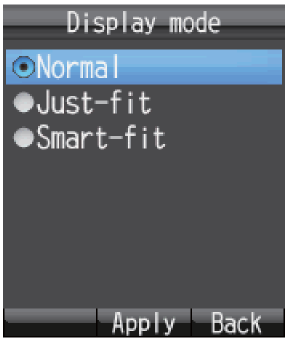
Just-fit


Inmarsat | Communicati
operational and social
communications to the
broadband IP era
Inmarsat
Inmarsat
FleetBroadband
Menu
Select
Close

Smart-fit

To change the display mode, do the following:

1. In the [Web settings] menu, press **3** to select [Disp. mode] to show the [Display mode] screen.


Display mode
◉Normal
●Just-fit
●Smart-fit
Apply
Back

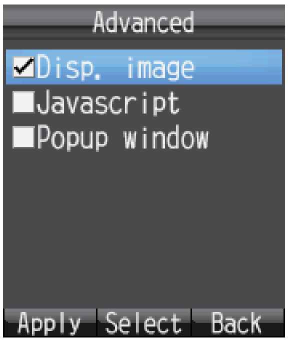
2. Press ▲ or ▼ to select [Normal], [Just-fit] or [Smart-fit].
3. Press the **Enter** key to select.
4. Press the ☎ key to close the menu.

3.4.4 Advanced settings

Display image, Javascript and Popup window options can be set in Advanced Settings.

- **[Display Image]**: Display or do not display images when viewing web pages. Uncheck to display pages without images.
- **[Javascript]**: Turn Javascript on or off when viewing web pages. Insert the checkmark to correctly view pages that use javascript.
- **[Popup window]**: Block or allow popup windows when viewing web pages. Insert the checkmark to block popup windows.

1. In the [Web settings] menu, press **4** to select [Advanced] to show the [Advanced] screen.

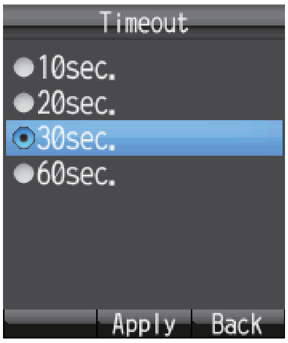

Advanced
☑Disp. image
☐Javascript
☐Popup window
Apply
Select
Back

2. Press ▲ or ▼ to select the item to edit.
3. Press the **Enter** key to insert or remove a [✓] in the box corresponding to each item.
4. Press the 🔊 key to apply settings.
5. Press the ☎ key to close the menu.

3.4.5 How to set time out

Set the period of no activity before the handset disconnects from the Web. The default setting is 30 seconds. To change the Timeout setting, do the following:

1. In the [Web settings] menu, press **5** to select [Timeout] to show the [Timeout] screen.

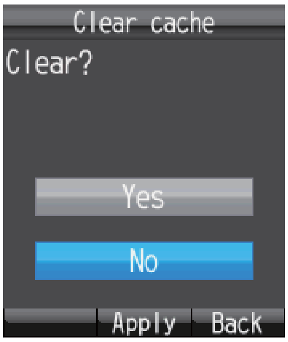


2. Press ▲ or ▼ to select a time.
3. Press the **Enter** key to set.
4. Press the ☎ key to close the menu.

3.4.6 How to clear the cache

The Cache is a section of memory where downloaded information is stored temporarily. If the Cache becomes full, the oldest data is deleted automatically. To manually clear all of the data in the cache, do the following:

1. In the [Web settings] menu, press **6** to select [Clear cache] to show the [Clear cache] screen.



2. Press ▲ to select [Yes] and press the **Enter** key.
3. Press the ☎ key to close the menu.

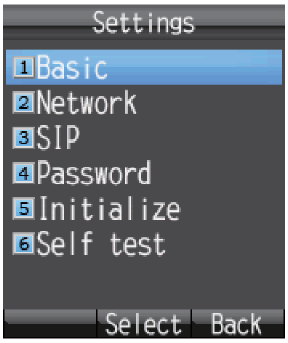
3.5 Individual Settings Menu

Basic (settings), Network, SIP, Operation Password, Initialization and Self test can be accessed from the [Settings] menu. Initialize and Self test are explained in Chapter 7.

The communication unit contains the following server functions:

- DHCP Server
- DNS Server
- NTP Server
- IMAP Server (for SMS)
- SIP Server (for telephone)

1. At the idle screen, press the **Enter** key to open the main menu.
2. Press ▼ to select the [Settings] icon and press the **Enter** key to show the [Settings] menu.


Settings
1 Basic
2 Network
3 SIP
4 Password
5 Initialize
6 Self test
Select
Back

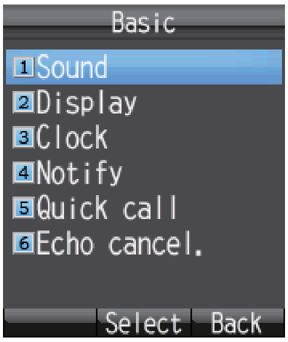
3.5.1 Basic settings

Sound, Display, Clock, Notify, Quick call and Echo Cancel can be set from the [Basic] menu. [Sound] can also be accessed by pressing the 🔊 key at the idle screen, or select [Sound] from the main menu (see section 3.1). [Display] can also be accessed by selecting [Display] from the main menu (see section 3.2).

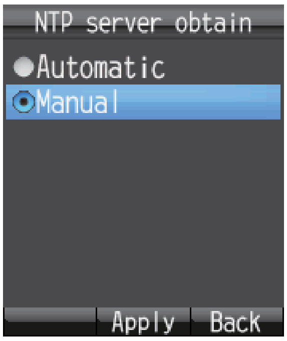
How to set the clock

GPS time data is fed from the communication unit. If you change the IP address of the communication unit, do as follows to get data from the communication unit. The Clock setting in this procedure is for manual setting of the clock. For Automatic, this procedure is not necessary since the IP address of the commuication unit is automatically changed.

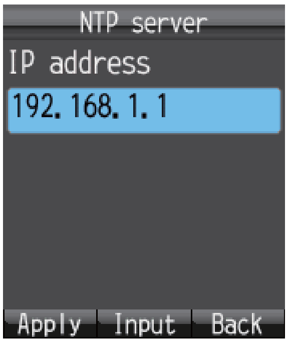
1. In the [Settings] menu, press **1** to open the [Basic] menu.


Basic
1 Sound
2 Display
3 Clock
4 Notify
5 Quick call
6 Echo cancel.
Select
Back

2. Press **3** to select [Clock] to show the [NTP server obtain] screen.


NTP server obtain
● Automatic
◉ Manual
Apply
Back

3. Press ▼ to select Manual then press the **Enter** key to show the NTP server IP address input screen.


NTP server
Apply
Input
Back

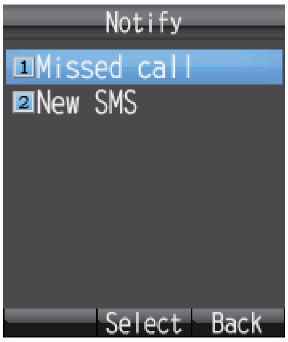
IP address
192.168.1.1

4. Select IP address then press the **Enter** key to show the IP address entry screen.
5. Enter the IP address (maximum 15 characters) of the communication unit then press the **Enter** key.
6. Press the 🔊 key to apply the setting.
7. Press the ☎ key to close the menu.

How to set call and message notifications

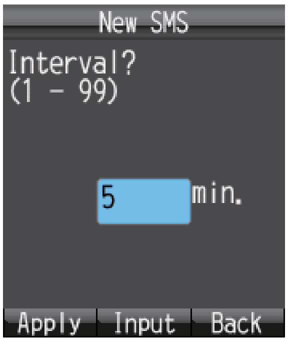
Set the notifications for missed call and received messages at the [Notify] screen. Notifications can be set to appear as icons (☎ / ✉) on the upper part of the screen and as a window message, or as icons with no window message.

1. In the [Settings] menu, press **1** to select [Basic] to show the [Basic] menu.
2. Press **4** to select [Notify] to show the [Notify] screen.


Notify
1 Missed call
2 New SMS
Select
Back

3. For missed call notification setting, press **1** to open the [Missed call] screen. For received message notification setting, press **2** to open the [New SMS] screen.

4. To set notifications as both icons and a window message, set to [ON]. If you don’t need to display the window message and icon, set to [OFF].
5. Press the **Enter** key.
   If you select [ON] at the above step, the following [New SMS] window appears. Go to step 6.
   If you select [OFF], go to step 9.


New SMS

Interval?
(1 - 99)

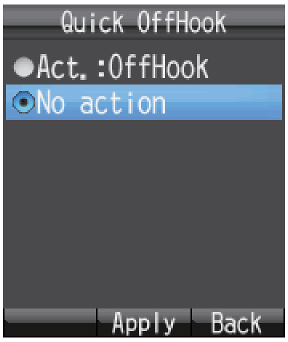
5 min.

6. Press the **Enter** key to open the input screen.
7. Enter the check interval (1 - 99 minutes) and press the **Enter** key.
   This sets the length of time to access the SMS server to check a new message. If there is a new message, the icon and the message window are displayed.
8. Press the 🔊 key.
9. Press the ☎ key to close the menu.

How to set Quick Off hook

When quick off hook is set to ON, to take the handset off the cradle has the same effect as to press the 📞 key (phone answers automatically).

1. In the [Settings] menu, press **1** to select [Basic] to show the [Basic] menu.
2. Press **5** to select [Quick call] to display the [Quick OffHook] screen.


Quick OffHook

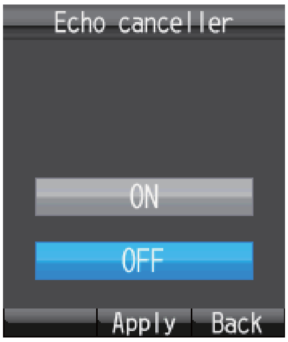
● Act. :OffHook
◉ No action

3. Press ▲ or ▼ to choose setting for off hook:
   [**Act.: OffHook**]: Removing the handset from the cradle has the same result as to press the 📞 key.
   [**No action**]: Removing the handset from the cradle has no effect.
4. Press the **Enter** key.
5. Press the ☎ key to close the menu.

How to set the echo canceller

If the echo canceller is off, you may hear the delayed echo of your own voice in the handset. Turn the echo canceller on to suppress the echo of your own voice. Do the following to turn echo canceller on or off:

1. In the [Settings] menu, press **1** to select [Basic] to show the [Basic] menu.
2. Press **6** to select [Echo cancel.]. You are asked to enter the operation password.
3. Press the **Enter** key.
4. Enter the operation password. Press the **Enter** key.
5. Press ▼ to select [OK] and press the **Enter** key to show the [Echo canceller] screen.

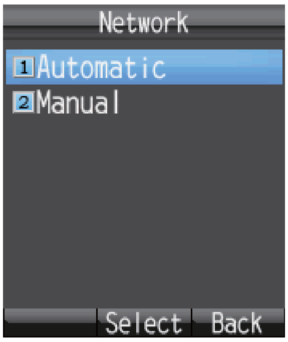


6. To turn on [Echo canceller], select [ON]. To turn off [Echo canceller], select [OFF].
7. Press the **Enter** key.
8. Press the ⏻ key to close the menu.

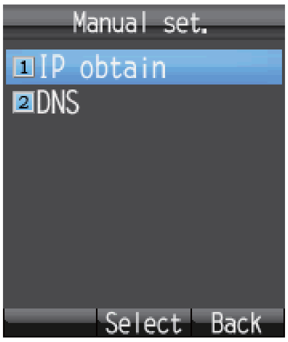
3.5.2 Network settings

Network settings can be set automatically or manually.

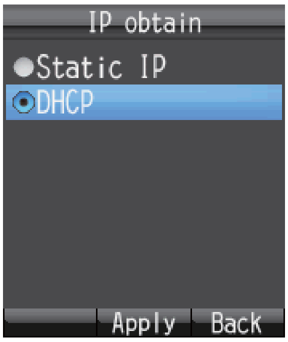
1. In the [Settings] menu, press **2** to open the [Network] menu. You are asked to enter the operation password.
2. Press the **Enter** key.
3. Enter the operation password and press the **Enter** key.
4. Press ▼ to select [OK] and press the **Enter** key to show the [Network] menu.



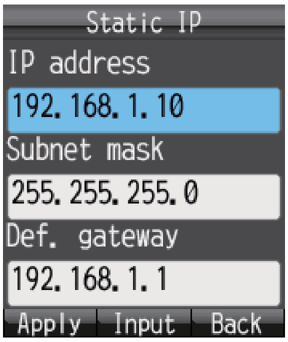
5. To have settings detected automatically, press **1** to select [Automatic]. To enter settings manually, press **2** to select [Manual]. For [Automatic], go to step 24. For [Manual], go to step 6.



6. Press **1** to select [IP obtain] to show the [IP obtain] screen.



7. Press ▲ or ▼ to select the method for obtaining the IP address.
[**Static IP**]: The IP address, subnet mask and default gateway are set manually.
[**DHCP**]: The IP address, subnet mask and default gateway are obtained automatically from the DHCP server.
8. Press the **Enter** key. Do one of the following depending on selection made at step 7.
If you select the [Static IP] at step 7, the [Static IP] screen appears. Go to step 9.
If you select the [DHCP] at the step 7, the [Manual set.] screen appears. Go to step 16.

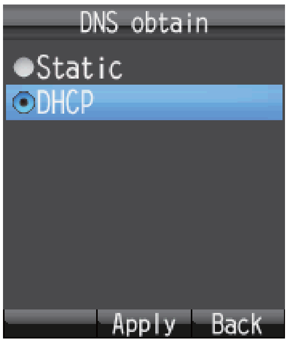


IP address
192.168.1.10
Subnet mask
255.255.255.0
Def. gateway
192.168.1.1

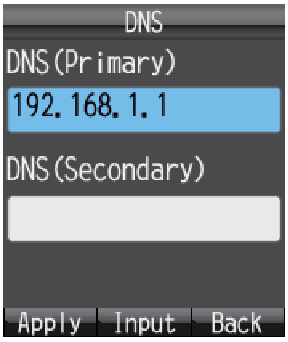
Static IP factory default settings

9. With the [IP address] field selected, press the **Enter** key.
10. Enter the IP address for this unit, and press the **Enter** key.
11. Press ▼ to select the [Subnet mask] field, and press the **Enter** key.
12. Enter the Subnet mask and press the **Enter** key.
13. Press ▼ to select the [Def. gateway] field, and press the **Enter** key.

14. Enter the default gateway (IP address of the router) and press the **Enter** key.
15. Press the 🔊 key to return to the [Manual set.] menu.
16. Press **2** to select the [DNS] menu to show the [DNS obtain] screen.



17. Press ▲ or ▼ to select the method for obtaining the DNS server address.
    [**Static**]: Set Primary and Secondary DNS server addresses manually.
    [**DHCP**]: Obtain DNS server address automatically from the DHCP server.
18. Press the **Enter** key. Do one of the following depending on selection made at step 17.
    If you select the [static] at step 17, the DNS entry screen appears. Go to step 19.
    If you select the [DHCP] at step 17, the [Manual set.] screen appears. Go to step 24.


DNS

DNS (Primary)

192.168.1.1

DNS (Secondary)

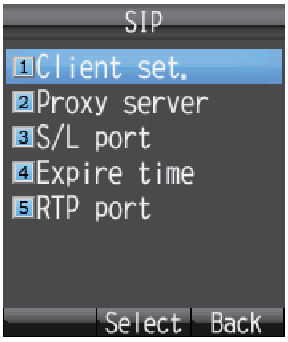
DNS factory default settings

19. With the [DNS (Primary)] field selected, press the **Enter** key.
20. Enter the IP address of the primary DNS server and press the **Enter** key.
21. Press ▼ to select the [DNS (Secondary)] field, and press the **Enter** key.
22. Enter the IP address of the secondary DNS Server and press the **Enter** key.
    Note: If only the Secondary DNS Server address is entered, the Primary DNS is set to the same value.
23. Press the 🔊 key to return to the [Manual set.] menu.
24. Press the ☎ key to close the menu.

3.5.3 SIP settings

This section describes SIP server settings. Do the procedure if it is necessary to enter SIP settings.

1. In the [Settings] menu, press **3** to select [SIP] to show the [SIP] menu.



2. Press one of keys **1** **-5** depending on your objective.
   1: Set SIP client.
   2: Set SIP proxy server.
   3: Set SIP server port number.
   4: Set SIP server authentication interval.
   5: Set RTP port.
3. Set SIP by referring to the descriptions in the table.

Menu	Item	Description
Client set.*1	Phone number	Enter extension number (1000 - 9999).
	Password	Enter SIP password. Up to a maximum of eight alphanumeric characters (upper case alphabet only) can be used. This password is for identification at the SIP server.
	Nickname	Enter a nickname (maximum of 50 alphabet). The nickname appears on the display of the called extension handset.
Proxy server *2	Automatic	The IP address (IP address of communication unit) of the SIP proxy server is automatically changed.
	Manual	Enter the address (IP address of communication unit) of the SIP proxy server manually.
S/L port	Server port	Enter server port number (0 - 65535).
	Local port	Enter local port number (0 - 65535).
Expire time	-	Enter expiration time (1800 - 7200 (sec.)).
RTP port	RTP port 1	Enter RTP port 1 (1024 - 9998, even number only). Set different from RTP port 2.
	RTP port 2	Enter RTP port 2 (1024 - 9998, even number only). Set different from RTP port 1.

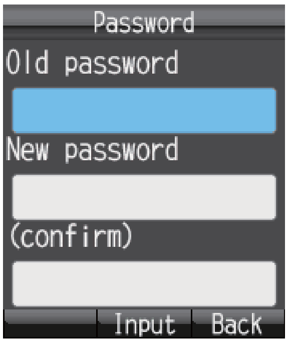
*1: To change both extension number and SIP password at the [Client set.] menu, you must also change a setting of the Web software at the SIP server. (See page 6-7.) The telephone functions cannot be used if the settings for SIP client and SIP server are different.

*2: The IP address of the SIP proxy server must be the same as the IP address of the communication unit in order to use the telephone function.

3.5.4 How to change operation password for the handset

Do this procedure to change the operation password. After entering a new password be sure to write it down. If the password is lost, contact your dealer to restore factory settings. If this occurs, the default settings must be restored. (See section 7.7.1).

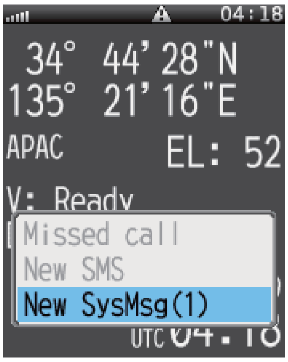
1. In the [Settings] menu, press **4** to select [Password] to show the [Password] menu.



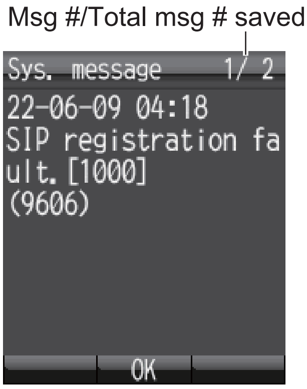
2. With the [Old password] field selected, press the **Enter** key.
3. Enter the current password and press the **Enter** key. The entered characters are shown with asterisks (*).
4. Press ▼ to select the [New password] field and press the **Enter** key.
5. Enter the new password (4 - 8 characters, upper case alphabet only) and press the **Enter** key.
6. Press ▼ to select the [(confirm)] field and press the **Enter** key.
7. Re-enter the same new password for confirmation and press the **Enter** key.
8. Press the 🔊 key. The message "Changed." appears and the equipment returns to the [Settings] menu.
   Note: If the password could not be changed, the message "Could not change" appears. Repeat this procedure.
9. Press the ☎ key to close the menu.

3.6 System Messages

If an alarm occurs in a unit connected in the same network, the handsets sounds an alarm tone and an alert information window displays. The alarm icon (⚠) also appears at the status bar on the upper part of the screen.



1. In the alert information window, select [New SysMsg] and press the **Enter** key. The most recent system messages appears. A maximum of 10 system messages can be saved, however the messages are erased when the power is turned off.


Msg #/Total msg # saved
Sys. message 1/ 2
OK

22-06-09 04:18
SIP registration fault.[1000]
(9606)

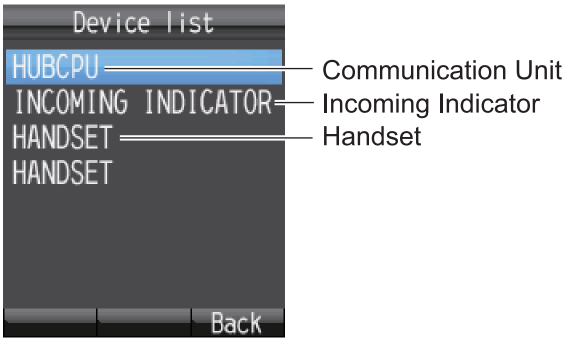
2. If there are more than two alert messages, press ◀ and ▶ to cycle through the messages. Use ◀ to go back one message, and ▶ to go forward one message.
3. Press the **Enter** key to close the message.

   Note: You can also display system messages with the [Sys Msg] icon in the main menu.

3.7 Device List

The Device list displays a list of all devices (communication unit, handset, incoming indicator).

1. At the idle screen, press the **Enter** key to open the main menu.
2. Press ◀, ▼ to select the [Device] icon and press the **Enter** key. The message "Detecting" appears while the list is being prepared. When the search is completed, the [Device list] screen appears.

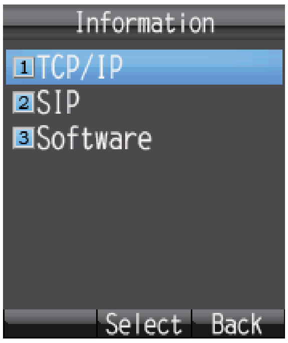

Device list
HUBCPU
INCOMING INDICATOR
HANDSET
HANDSET
Back
Communication Unit
Incoming Indicator
Handset

3. Press the ☎ key to close the menu.

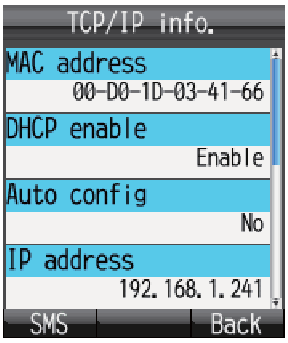
3.8 How to Show TCP/IP, SIP and Software Version information

Do as follows to see TCP/IP, SIP and software version information.

1. At the idle screen, press the **Enter** key to show the main menu.
2. Press ▶, then ▼ to select the [Info] icon and press the **Enter** key to show the [Information] menu.

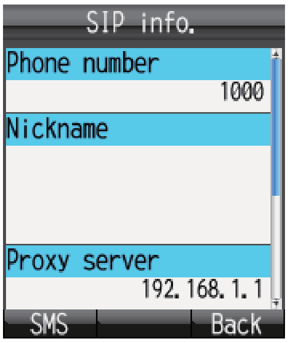

Information
1 TCP/IP
2 SIP
3 Software
Select
Back

3. Press one of keys **1** - **3** to view information as follows:
   1: TCP/IP information
   2: SIP information
   3: Software version information of handset


TCP/IP info.
SMS
Back

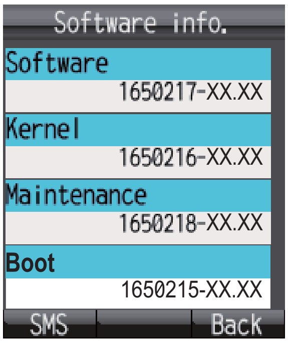
MAC address 00-D0-1D-03-41-66
DHCP enable Enable
Auto config No
IP address 192.168.1.241

TCP/IP info


SIP info.
SMS
Back

Phone number 1000
Nickname
Proxy server 192.168.1.1

SIP info


Software info.
SMS
Back

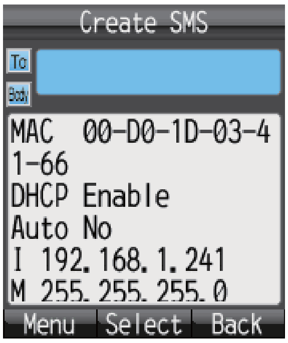
Software 1650217-XX.XX
Kernel 1650216-XX.XX
Maintenance 1650218-XX.XX
Boot 1650215-XX.XX

Software info

XX: Program version no.

4. Press ▲ or ▼ to scroll through the screen to see the information.
5. Press the ☎ key to close the menu.

   Note: If you need to send the information by SMS, press the 🔊 key to open the [Create SMS] screen.

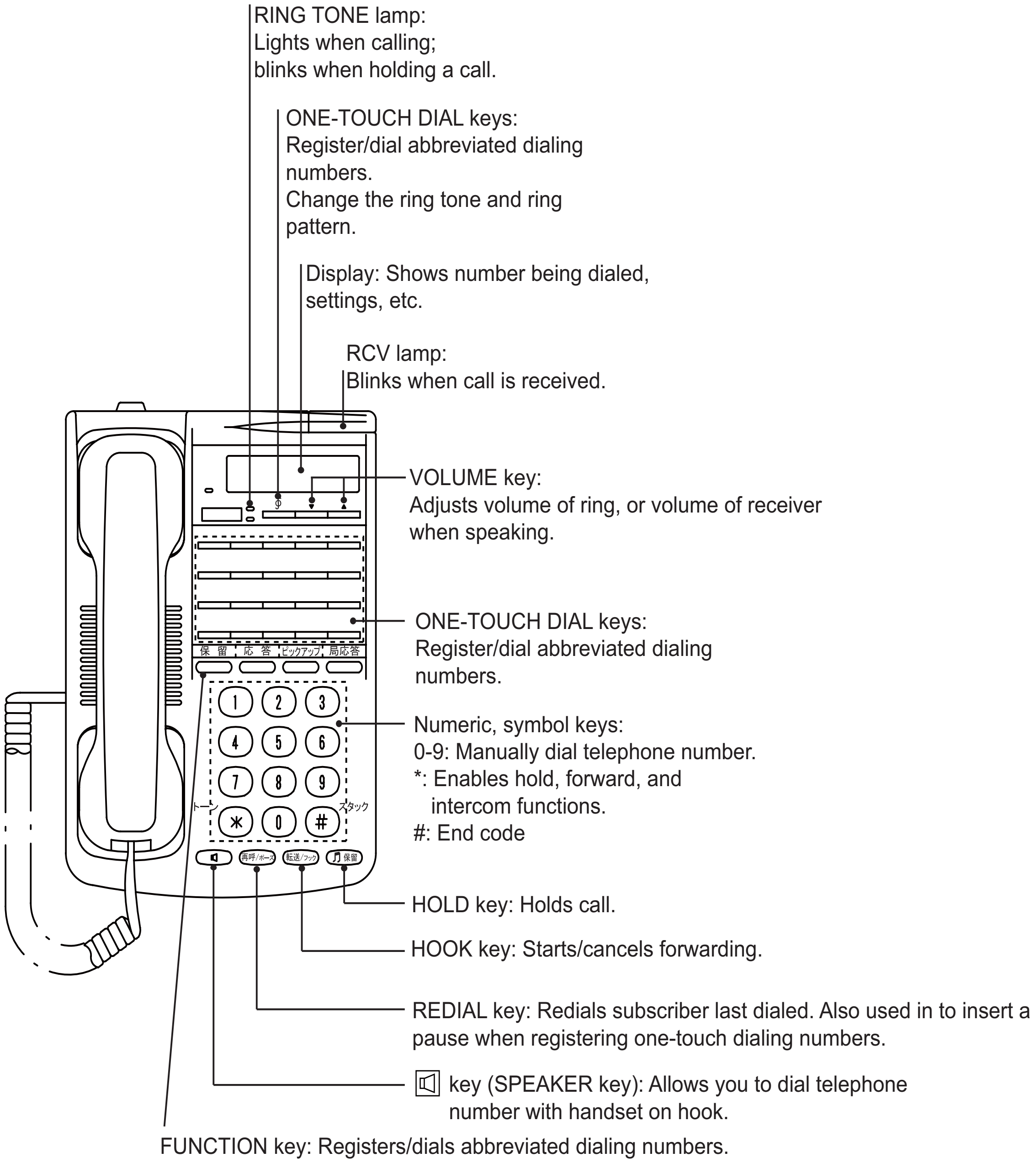

Create SMS
To
Body
Menu
Select
Back

MAC 00-D0-1D-03-4
1-66
DHCP Enable
Auto No
I 192.168.1.241
M 255.255.255.0

TCP/IP Info

4. OPTIONAL DEVICES

4.1 Analog Telephone FC755D1



RING TONE lamp:
Lights when calling;
blinks when holding a call.

ONE-TOUCH DIAL keys:
Register/dial abbreviated dialing numbers.
Change the ring tone and ring pattern.

Display: Shows number being dialed, settings, etc.

RCV lamp:
Blinks when call is received.

VOLUME key:
Adjusts volume of ring, or volume of receiver when speaking.

ONE-TOUCH DIAL keys:
Register/dial abbreviated dialing numbers.

Numeric, symbol keys:
0-9: Manually dial telephone number.
*: Enables hold, forward, and intercom functions.
#: End code

HOLD key: Holds call.

HOOK key: Starts/cancels forwarding.

REDIAL key: Redials subscriber last dialed. Also used in to insert a pause when registering one-touch dialing numbers.

🔈 key (SPEAKER key): Allows you to dial telephone number with handset on hook.

FUNCTION key: Registers/dials abbreviated dialing numbers.

Note: If a different telephone is used it must satisfy the requirements shown below.

Item	Specification	Standard
On hook voltage	49 VDC (no load)	ETSI, JAPAN
Ringer frequency	20 Hz	JAPAN, ANSI
Ringer pattern	2 s ON/4 s OFF	ANSI
Ringer voltage	65 Vrms (no load)	ETSI, JAPAN
Off hook detection voltage	10 mA	ETSI
Off hook group voltage	24 mA (300 ohm load)	ETSI, JAPAN
2 W impedance	600 ohms	JAPAN

4.2 Fax (FX-2820)

The optional FAX unit can send and receive faxes using 3.1kHz audio service from land or ship-to-ship.

Note: Depending on SIM card type, 3.1kHz audio service may not be available. Check with the company that issued your SIM card.

How to dial

To Land

Enter 2*00, the Country Code, the fax number, followed by **#** and **Start** to send a fax.

Ship-to-ship

Enter 2*00, 870 (ocean area code), followed by the Inmarsat number, **#** and **Start** to send a fax.

Note 1: In the Web software, if the analog port [Type] is set to [FAX] or [TEL & FAX], a Fax can be sent without entering [2*] before the number. See the Installation Manual.

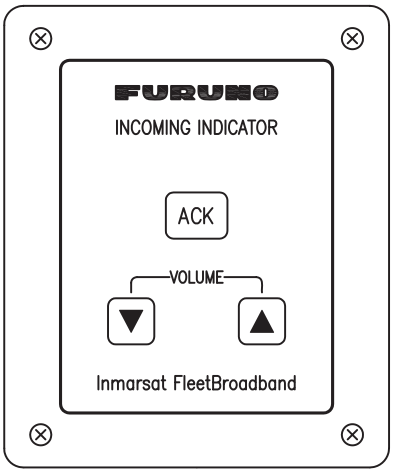
Note 2: When sending a FAX, the number that is printed on the sent fax sheet is the telephone number of your unit, not the FAX number. When replying to a FAX, be sure to ask the sender for their FAX number.

Note 3: When you send a fax from FELCOM 250/500 to FELCOM 30/50/70, always use a 3.1 Khz audio service number.

4.3 Incoming Indicator (FB-3000)

The Incoming Indicator sounds a buzzer and blinks its lamp when a telephone call, fax or ISDN (UDI/RDI, FELCOM 500 only) communication is received. Press the **ACK** button to stop the buzzer on the receiving fax. In the case of a phone call, the alarm automatically stops when the handset is removed from the cradle. Press the [▲] and [▼] buttons to raise and lower the alarm volume.

There are two selectable alarm types. The alarm can also be set to Off. (See the Installation Manual.)



Note: The buzzer volume will reset to maximum volume, regardless of user settings, every time the power is connected/disconnected.

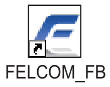
5. WEB SOFTWARE

Adjust the Communication Unit settings, create SMS messages, and create/edit the Contacts list using the Web software. Connect the Communication Unit to a PC to use the Web software. The Communication Unit works with one of the following web browsers:

- Internet Explorer version 6.0 or higher
- Mozilla Firefox version 3.0 or higher

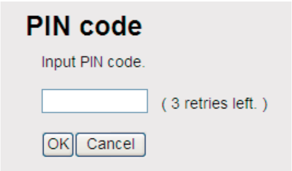
5.1 How to Open/Close the Web Software

1. Make sure the SIM card is inserted. Press the power switch of the Communication Unit to turn the unit on.
2. Switch the PC power on.
3. After the computer starts, double-click the [FELCOM_FB] icon on the desktop.



Felcom 250/500 icon

The Main screen displays.
Note: If the following PIN Code entry screen appears, enter the PIN code of the SIM card. (See section 1.3.)



PIN code

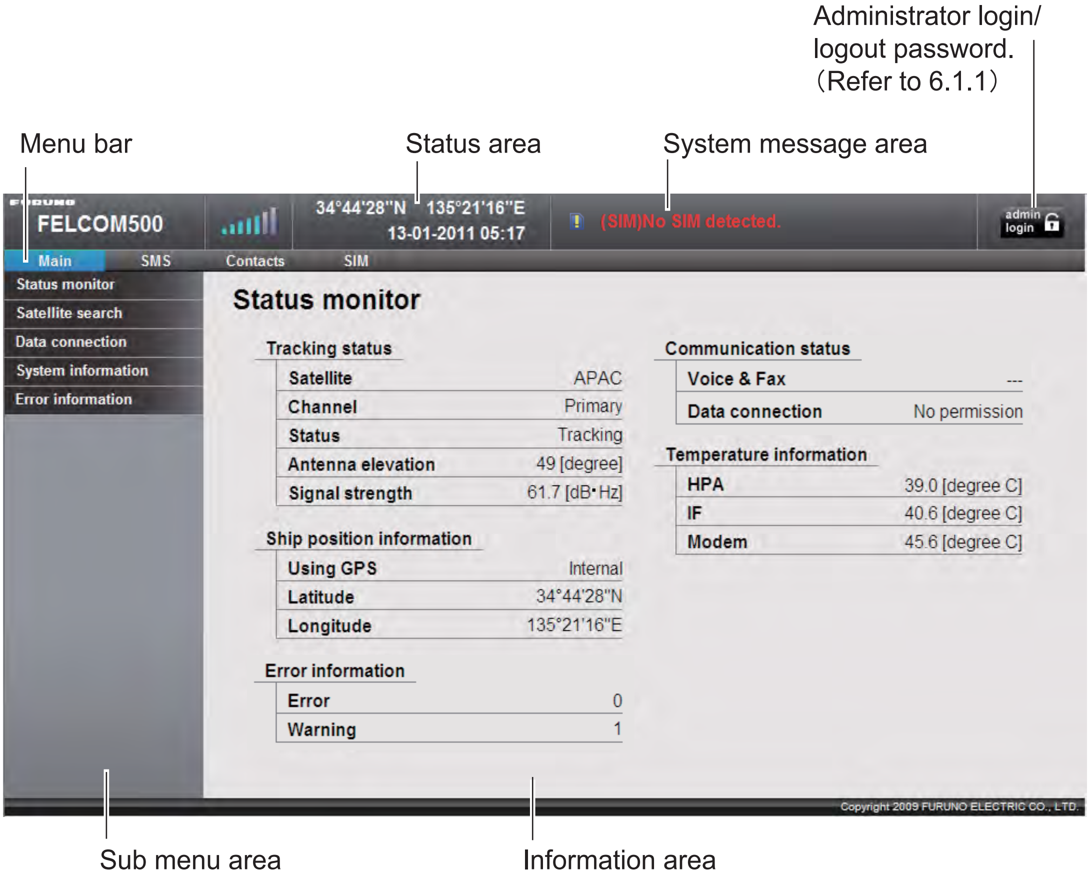
Input PIN code.

(3 retries left.)

4. To close the Web software, click the [X] (Close) button at the upper right corner of the window.
Note: If the system becomes overloaded while processing data, a CGI error may occur. In the case of an error, wait a short amount of time and try again.

5.2 Screen Explanation

The screen is divide into several areas.


Administrator login/
logout password.
(Refer to 6.1.1)
Menu bar
Status area
System message area
FURUNO
FELCOM500
34°44'28"N 135°21'16"E
13-01-2011 05:17
admin login
Main
SMS
Contacts
SIM
Status monitor
Satellite search
Data connection
System information
Error information
Copyright 2009 FURUNO ELECTRIC CO., LTD.
Sub menu area
Information area

(SIM)No SIM detected.

Status monitor

Tracking status

Satellite	APAC
Channel	Primary
Status	Tracking
Antenna elevation	49 [degree]
Signal strength	61.7 [dB•Hz]

Ship position information

Using GPS	Internal
Latitude	34°44'28"N
Longitude	135°21'16"E

Error information

Error	0
Warning	1

Communication status

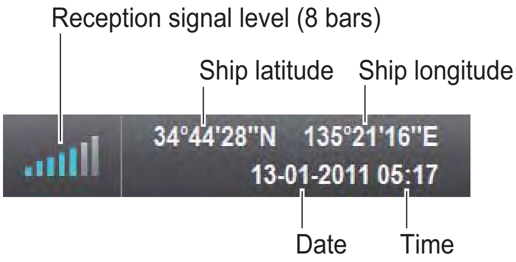
Voice & Fax	---
Data connection	No permission

Temperature information

HPA	39.0 [degree C]
IF	40.6 [degree C]
Modem	45.6 [degree C]

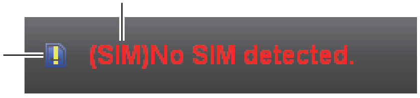
Status area

The status area displays the reception signal level, ship position information, date and time. Data is updated every 30 seconds.


Reception signal level (8 bars)
Ship latitude
Ship longitude
34°44'28"N 135°21'16"E
13-01-2011 05:17
Date
Time

System message area

Error and Warning messages are displayed in red letters in the System message area (See section 7.6.)


Affected area is displayed in brackets

Icon

(SIM)No SIM detected.

❗: SIM card related warning message

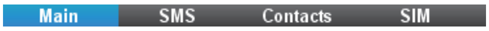
❌: Error message unrelated to SIM card message

⚠: Warning message unrelated to SIM card

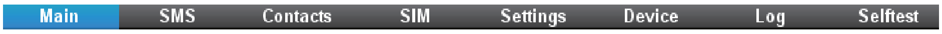
Menu bar

The menu bar contents are different when you are logged in as Administrator or if you are logged out. Click a menu item with the mouse pointer to view the contents in the sub menu or information areas.

Logged out:

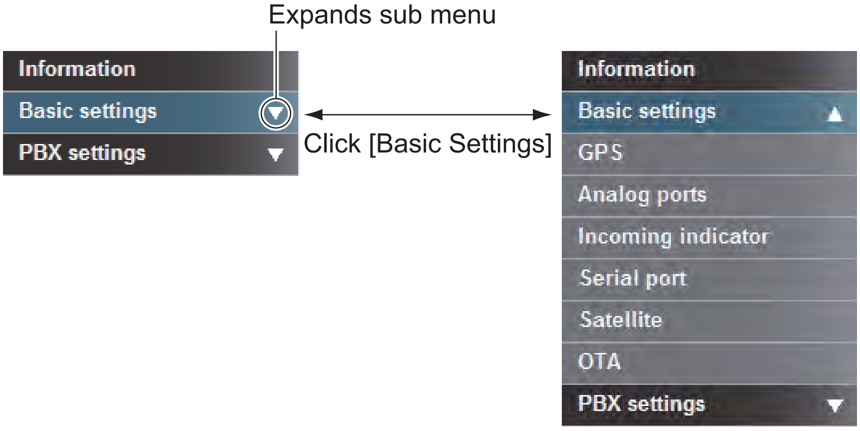

Main
SMS
Contacts
SIM

Logged in:


Main
SMS
Contacts
SIM
Settings
Device
Log
Selftest

Sub menu area

In the menu bar, click [Main], [SMS], [Settings], [Device], or [Log] to display the sub menu in the sub menu area. Click an item in the sub menu to display its contents in the Information area. Click ▼ to expand the sub menu for more contents items. Click ▲ to close the expanded submenu.


Expands sub menu

Click [Basic Settings]

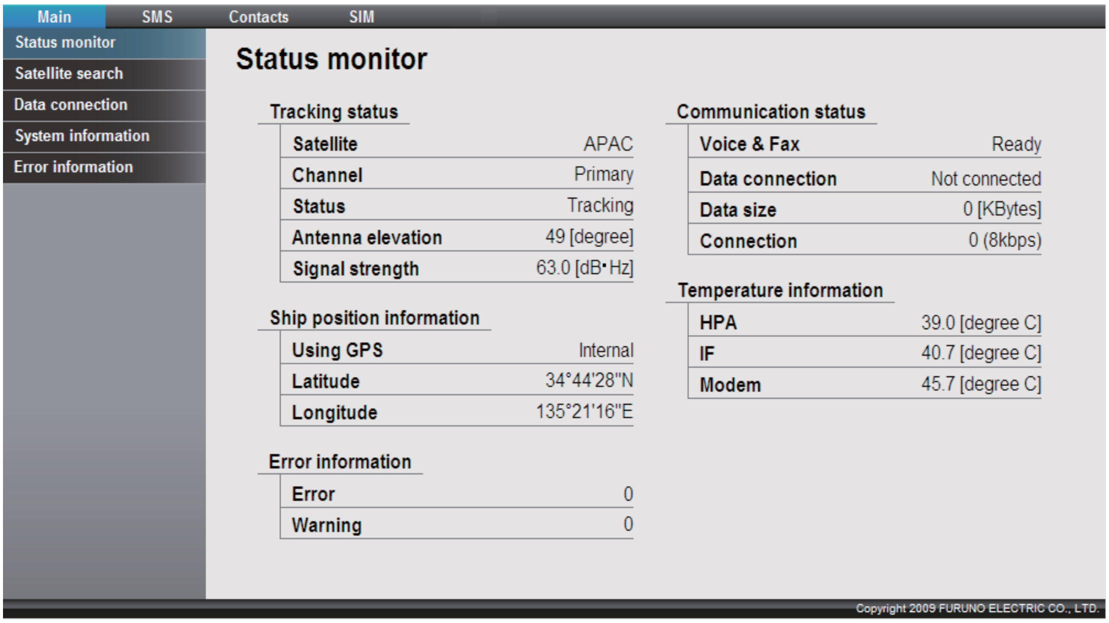
Information
Basic settings
PBX settings
Information
Basic settings
GPS
Analog ports
Incoming indicator
Serial port
Satellite
OTA
PBX settings

Information area

The information area displays current setting conditions and various information. Setting conditions can be changed from the menu.

5.3 Status Monitor

The Status monitor displays satellite tracking status, communication status, ship position information, Communication Unit internal temperature, and error information. Data is refreshed every five seconds. If the Status monitor is not displayed, do the following to view:



Status monitor

Tracking status

Satellite	APAC
Channel	Primary
Status	Tracking
Antenna elevation	49 [degree]
Signal strength	63.0 [dB•Hz]

Ship position information

Using GPS	Internal
Latitude	34°44'28"N
Longitude	135°21'16"E

Error information

Error	0
Warning	0

Communication status

Voice & Fax	Ready
Data connection	Not connected
Data size	0 [KBytes]
Connection	0 (8kbps)

Temperature information

HPA	39.0 [degree C]
IF	40.7 [degree C]
Modem	45.7 [degree C]

1. Click [Main] in the menu bar.
2. Click [Status monitor] in the sub menu. The [Status monitor] appears as shown:

Refer to the following table description of Status Monitor items:

Item	Description
Tracking status: Satellite tracking information	
Satellite	Name of Satellite that is being tracked.
Channel	Displays the searching or tracking channel (Primary/ Alternate). • Primary: First global channel frequency • Alternate: Second global channel frequency
Status	Displays satellite tracking status. Searching (searching for satellite), Tuning (antenna fine tuning), Tracking (tracking satellite), Blocking (satellite signal is blocked)
Antenna elevation	Displays antenna elevation angle.
Signal strength	Displays signal reception level in the modem.
Communication status: Communication information	
Voice & Fax	Display voice communication status. --- (unavailable), Ready (Line is ready), Voice (Phone in use), Fax (Fax in use), UDI[*1] (ISDN UDI in use), RDI[*1] (ISDN RDI in use)

Item	Description
Data connection	Displays data communication status. --- (Not available), No permission (No connection permission), Not connected, Connected (in green). The status of all groups is shown if logged in as Administrator. “Connected” if one or more groups is connected; “Not connected” if no groups are connected.
Data size[*2]	Displays packet traffic volume of group affiliated with the PC currently in use. If logged in as Administrator, the packet volume for all groups is shown. If there is no satellite acquired “---” appears.
Connection[*2]	Displays Streaming IP packet session volume. The total for all groups is shown if logged in as Administrator.
Ship position information	
Using GPS	Displays GPS in use. Internal, External, or “no fix” (if GPS is missed).
Latitude	Displays ship latitude. If no GPS data, [_°_’_”] is displayed.
Longitude	Displays ship longitude. If no GPS data, [_°_’_”] is displayed.
Temperature information: Internal temperature information	
HPA	Temperature of the HPA board in the Antenna Unit. If no information, [---] is displayed.
IF	Temperature of the IF board in the Communication Unit. If no information, [---] is displayed.
Modem	Temperature of the modem board in the Communication Unit. If no information, [---] is displayed.
Error information	
Error	Active Error count.
Warning	Active Warning count.

*1: FELCOM 500 only

*2: No display if No permission is shown for Data connection.

5.4 Contacts

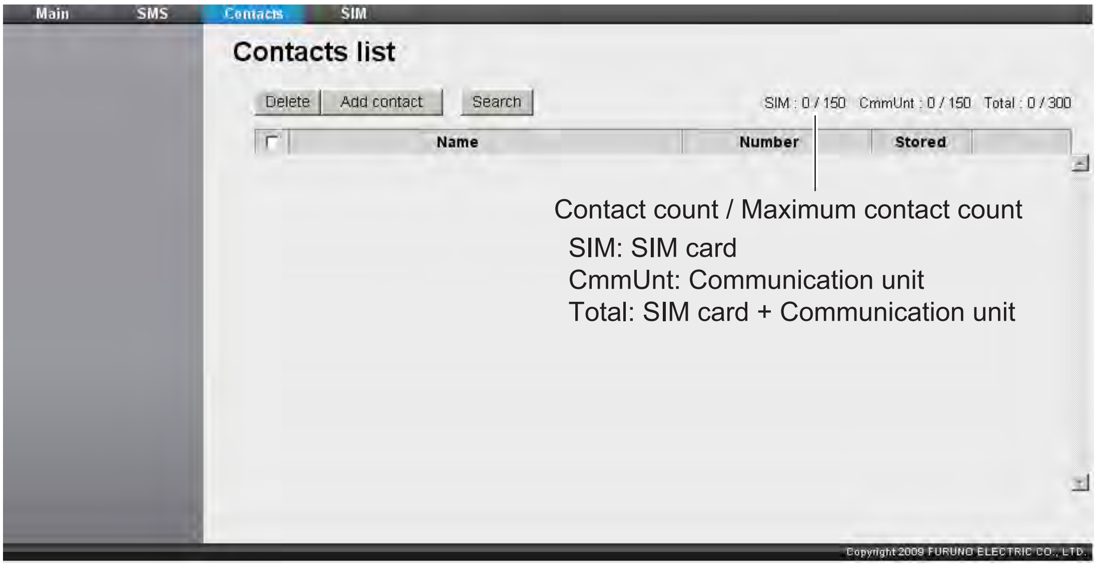
Like the handset, you can add, edit and delete contacts from Web software. Use the Web software to save contacts to the Communication Unit or SIM card.

Media	Maximum savable address count
Communication Unit	150 addresses
SIM card	Different with SIM card type

5.4.1 How to save to the Contact list

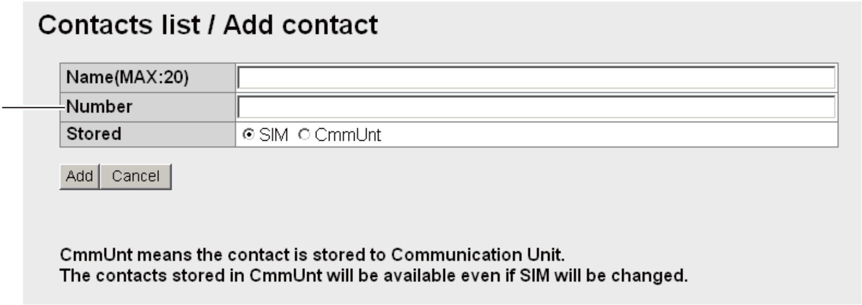
Save a contact name and number to the Contacts list as follows:

1. Click [Contacts] in the menu bar. The Contacts screen is displayed as shown below. It takes approx. two minutes after powering on to display the list.


Main
SMS
Contacts
SIM
Contacts list
Delete
Add contact
Search
SIM : 0 / 150 CmmUnt : 0 / 150 Total : 0 / 300
Name
Number
Stored
Copyright 2009 FURUNO ELECTRIC CO., LTD.

Contact count / Maximum contact count
SIM: SIM card
CmmUnt: Communication unit
Total: SIM card + Communication unit

2. Click the [Add contact] button. The new contact screen is displayed as shown:


Contacts list / Add contact
Name(MAX:20)
Number
Stored
● SIM ○ CmmUnt
Add
Cancel

Mandatory

CmmUnt means the contact is stored to Communication Unit.
The contacts stored in CmmUnt will be available even if SIM will be changed.

3. Input the name of the contact in the [Name] field.
   Input in alphanumeric characters, or symbols (except ^, {, }, [,] ~, |, and \). The character limit depends on the type of media storage used. When you save a contact (at step 5) the number of characters that you can input is shown with “MAX: *.*
4. Input the phone number in the [Number] field (Maximum 20 characters). Only numbers and the characters (#, *, and +) are allowed.
5. Select where to save the address in the [Stored] field (CmmUnt: Communication unit, SIM: SIM card.

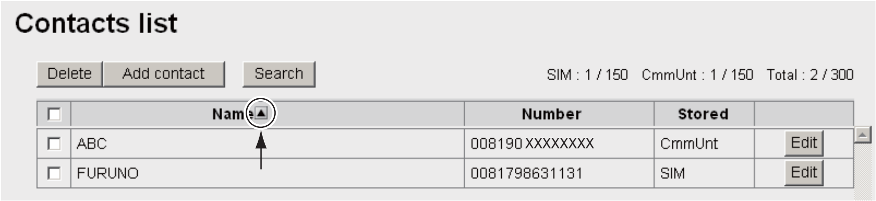
6. Click the [Add] button.
   When completed, the message "Completed." is displayed.
   Note: The following messages display when there is an error:
   - "Name is invalid": The entered name is not valid.
   - "Number is invalid": The entered number is not valid.
   - "Memory full. Can't register." The maximum amount of entries is exceeded.
7. Click the [OK] button.

5.4.2 How to arrange the Contacts list

How to sort the Contacts list

Display the contacts in ascending or descending order according to ASCII code.

1. Click the [Name] field at the very top of the Contacts list. A ▲ (or ▼) symbol is displayed beside [Name].



SIM : 1 / 150 CmmUnt : 1 / 150 Total : 2 / 300

☐	Name▲	Number	Stored	
☐	ABC	008190XXXXXXXX	CmmUnt	Edit
☐	FURUNO	0081798631131	SIM	Edit

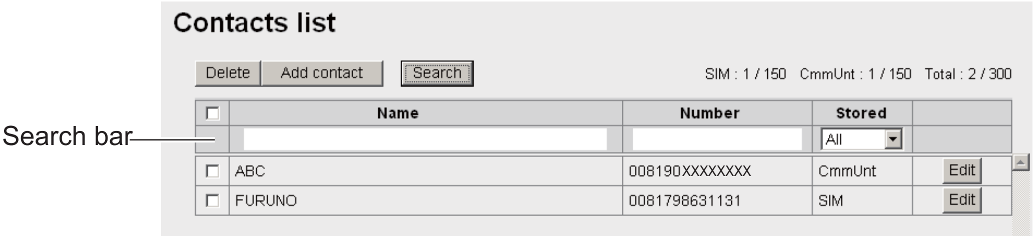
2. Click [Name] to toggle between ▲ and ▼.
   If ▲: The contact names appear in ascending order (symbol, number, alphabet).
   If ▼: The contact names appear in descending order (alphabet, number, symbol).

Note: Click [Number] at the top of the list to sort ascending or descending order for phone numbers.

How to search for a contact

Enter a name or number to search for a desired contact.

1. Click the [Search] button in the Contacts list. The search bar appears as shown: Click the search bar again to hide it.



SIM : 1 / 150 CmmUnt : 1 / 150 Total : 2 / 300

☐	Name	Number	Stored	
			All	
☐	ABC	008190XXXXXXXX	CmmUnt	Edit
☐	FURUNO	0081798631131	SIM	Edit

2. To search by name, enter part of the name in the [Name] field. To search by number, enter part of the number in the [Number] field. Contacts that match the entered search name or number display under the search bar.
   Note: If [CmmUnt] is selected in the [Stored] list box, only contacts saved on the Communication Unit are displayed. Further, for [SIM], you can display only the contacts stored on a SIM card.

5.4.3 How to edit contacts

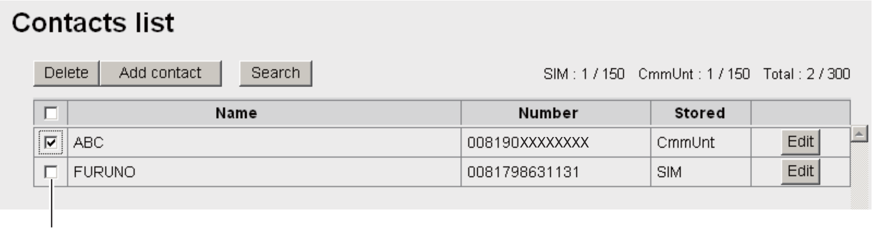
To edit the name or number of a contact, do the following.

1. Click [Contacts] in the menu bar.
2. Select a contact to edit, and click the [Edit] button on the right side of the contact.
3. Edit the name and/or number of the contact. It is also possible to edit the [Stored] field.
4. When finished, click the [Save] button. The message "Completed." displays.
5. Click the [OK] button.

5.4.4 How to delete data from contacts

Delete a single contact item, multiple, or all contact items.

1. Click [Contacts] in the menu bar.
2. Click the checkbox next to the [Name] field of the desired contacts to delete, to add a [✓] to the box.



SIM : 1 / 150 CmmUnt : 1 / 150 Total : 2 / 300

☐	Name	Number	Stored	
☑	ABC	008190XXXXXXXX	CmmUnt	Edit
☐	FURUNO	0081798631131	SIM	Edit

Checkbox

3. Click the [Delete] button. The confirmation message "Delete?" appears.
4. Click the [OK] button. The message "Delete completed." appears.
5. Click the [OK] button again to erase the message.

5.5 SMS (Short Message Service)

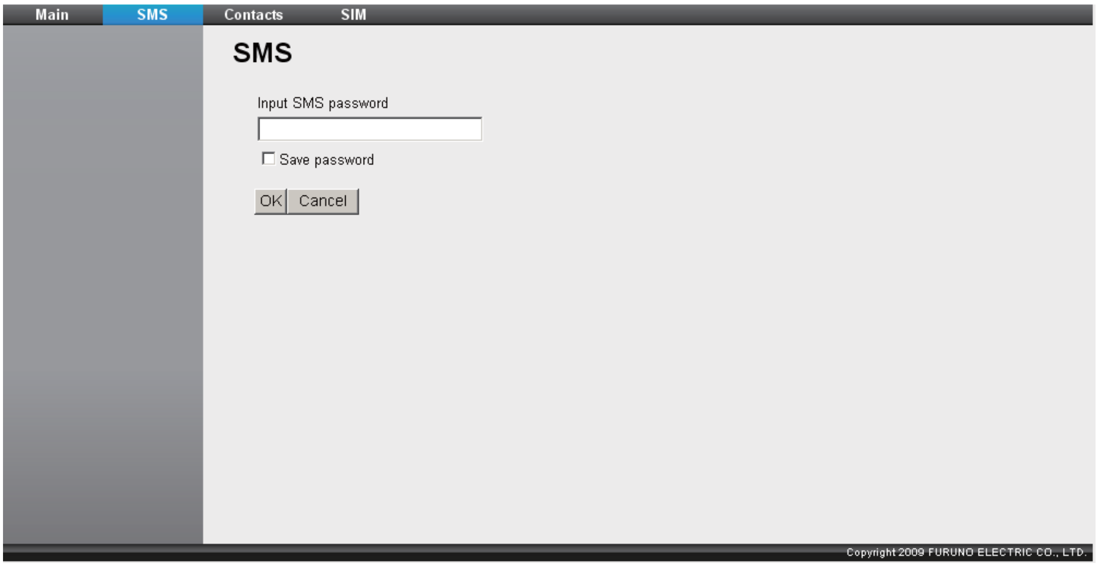
You can create SMS messages from the Web software or the handset. Messages are limited to 160 characters.

Note: Depending on the cellular phone provider, it is not always possible to send or receive messages from Inmarsat terminals. Refer to your cellular provider for information.

5.5.1 How to enter the SMS password

Enter a password to access the [SMS] menu.

1. Click [SMS] in the menu bar. The password entry screen appears as shown:

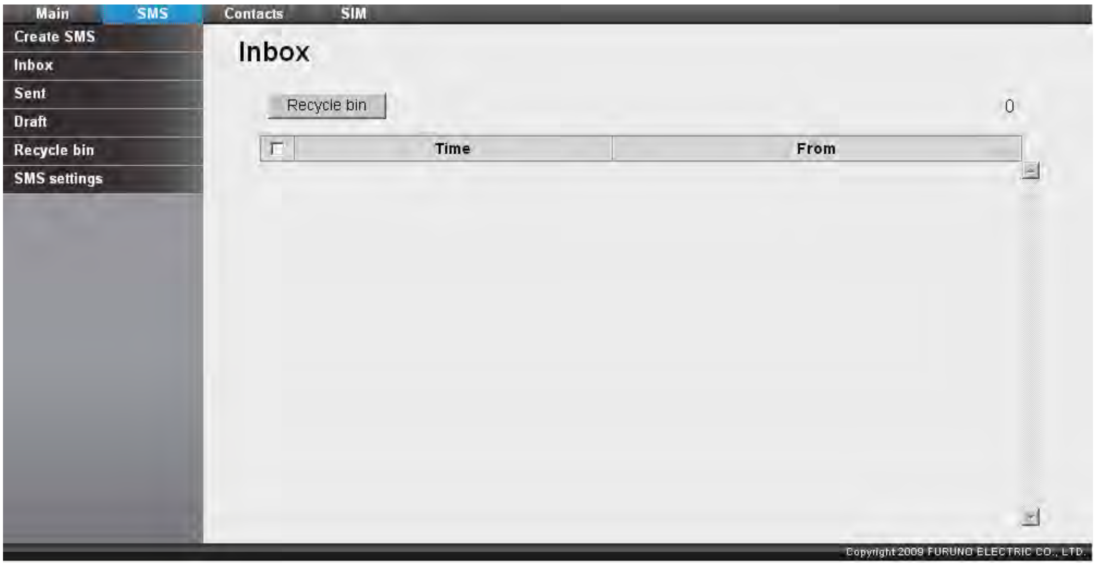


2. Enter the SMS password. The factory setting passwords is [01234567]. The numerals entered are shown with black circles (●). See section 1.6.
3. To disable password entry on future login, put a [✓] in the box next to [Save password] (click the box to add [✓]).If you enable the SMS password, see section 5.5.7.
4. Click the [OK] button. If password is correct, the SMS top screen displays.
   Note 1: If the password is entered incorrectly, the message “Password Invalid” appears. Click [OK] to close the message and correctly re-enter the password.
   Note 2: From hereafter, the explanation is given omitting password entry.

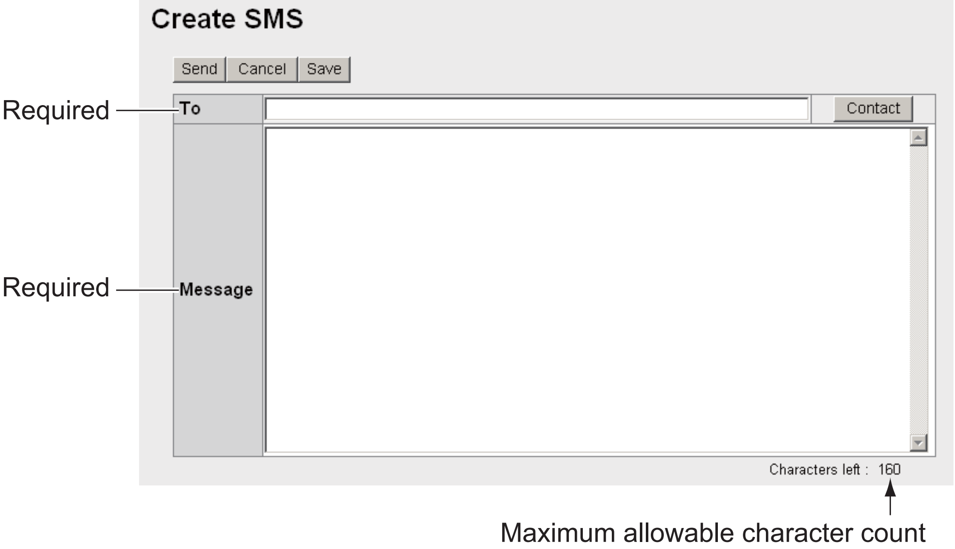
5.5.2 How to send an SMS message

SMS message have a limit of 160 characters (alphanumeric and symbols).

1. Click [SMS] in the menu bar. The SMS top screen (Inbox) is displayed as shown.


Main
SMS
Contacts
SIM
Create SMS
Inbox
Sent
Draft
Recycle bin
SMS settings
Inbox
Recycle bin
0
Time
From
Copyright 2009 FURUNO ELECTRIC CO., LTD.

2. Click the [Create SMS] sub-menu. The Create SMS screen appears as shown.


Create SMS
Send
Cancel
Save
Required
To
Contact
Required
Message
Characters left : 160
Maximum allowable character count

3. Use one of the following two methods to select recipient:
   Get from Contacts: Click the [Contact] button on the right side of the [To] field to select a recipient from the Contacts list. Select the contact and click the [Select] button.
   Enter phone number: Enter the phone number of the recipient in the [To] field (maximum 20 characters, numeric and [+] only)
4. Enter the message in the [Message] field (maximum 160 characters).
5. Click the [Send] button to send the message. When send is completed, "Message sent." displays.

   Note 1: To save the message without sending, click the **Save** button instead of the **Send** button. "Message saved." is displayed. The message is saved to the Draft box. Click [OK] to return to the SMS top screen.

Note 2: If the message could not be sent, "Message not sent." appears. The message is saved to the Draft box. Click [OK] to return to the SMS top screen.

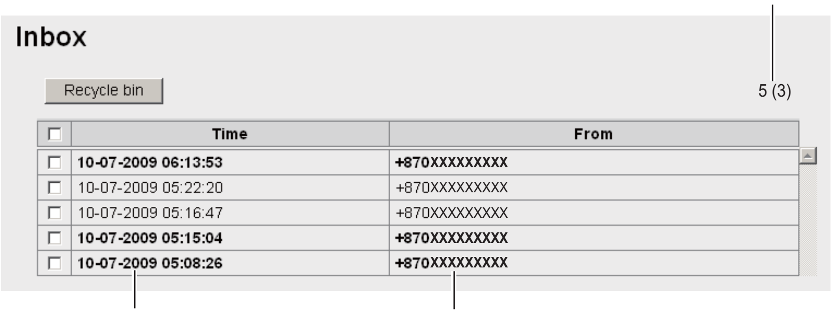
6. Click the [OK] button.

5.5.3 How to review a received message

Received messages are saved to the Inbox.

1. Click [SMS] in the menu bar. The SMS top screen (Inbox) appears. Unread messages are displayed in bold type.

Inbox message count (unread message count)

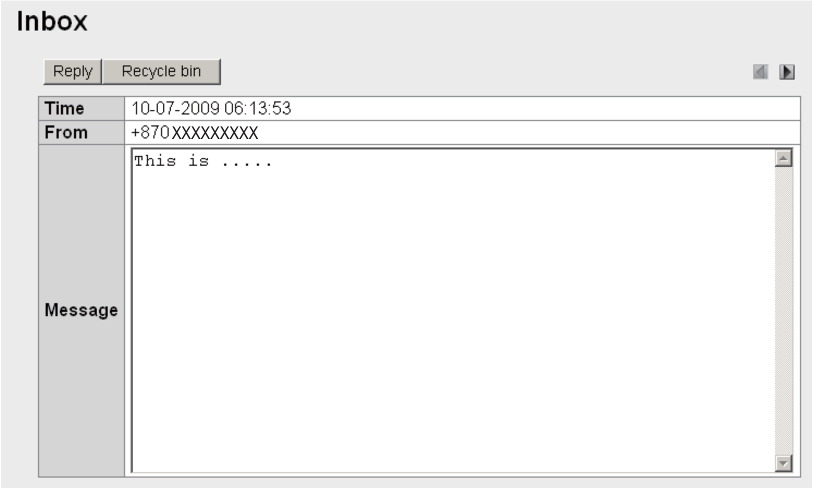


☐	Time	From
☐	**10-07-2009 06:13:53**	**+870XXXXXXXXX**
☐	10-07-2009 05:22:20	+870XXXXXXXXX
☐	10-07-2009 05:16:47	+870XXXXXXXXX
☐	**10-07-2009 05:15:04**	**+870XXXXXXXXX**
☐	**10-07-2009 05:08:26**	**+870XXXXXXXXX**

Received date and time

Sender
If the number is saved in Contacts, the name also displays.

2. Click the received date and time with the mouse. When the mouse pointer moves over the date and time, the date and time highlights blue. Detailed information about the message is displayed.



Time: 10-07-2009 06:13:53
From: +870XXXXXXXXX
Message: This is .....

Refer to the table below for operation information:

Operation	Procedure
Reply to sender	1) Click the [Reply] button. The Create SMS screen appears with the sender name in the [To] field. 2) Write the message in the [Message] field. 3) Click the [Send] button to send the message. 4) Click the [OK] button.
Send the message to the Recycle Bin.	1) Click the [Recycle Bin] button. The confirmation message "Move to Recycle bin?" displays. 2) Click the [OK] button.

Operation	Procedure
View the previous message when there are multiple messages.	Click ◀.
View the next message when there are multiple messages.	Click ▶.

5.5.4 Message boxes

There are four message boxes: [Inbox], [Sent], [Draft] and [Recycle bin]. When the amount of messages is more than the maximum, the oldest message is automatically erased from all boxes.

Box	Message type	Maximum Amount
[Inbox]	Received messages	All boxes: 200 messages total
[Sent]	Sent messages	
[Draft]	Un-sent messages	
[Recycle bin]	Messages erased from the other boxes	

How to send messages to the Recycle Bin

Send a single message, multiple messages or all messages to the Recycle Bin.

1. Click [SMS] in the menu bar.
2. Click the box to erase message from: [Inbox], [Sent], or [Draft].
3. Select the message(s) to send to the Recycle Bin and put a [✓] in the box on the left side of the message. To select all messages, put a [✓] in the box beside the [Time] title.
4. Click the [Recycle bin] button. The confirmation message "Move to Recycle bin?" appears.
5. Click the [OK] button to move the message(s) to the [Recycle bin].

How to sort messages

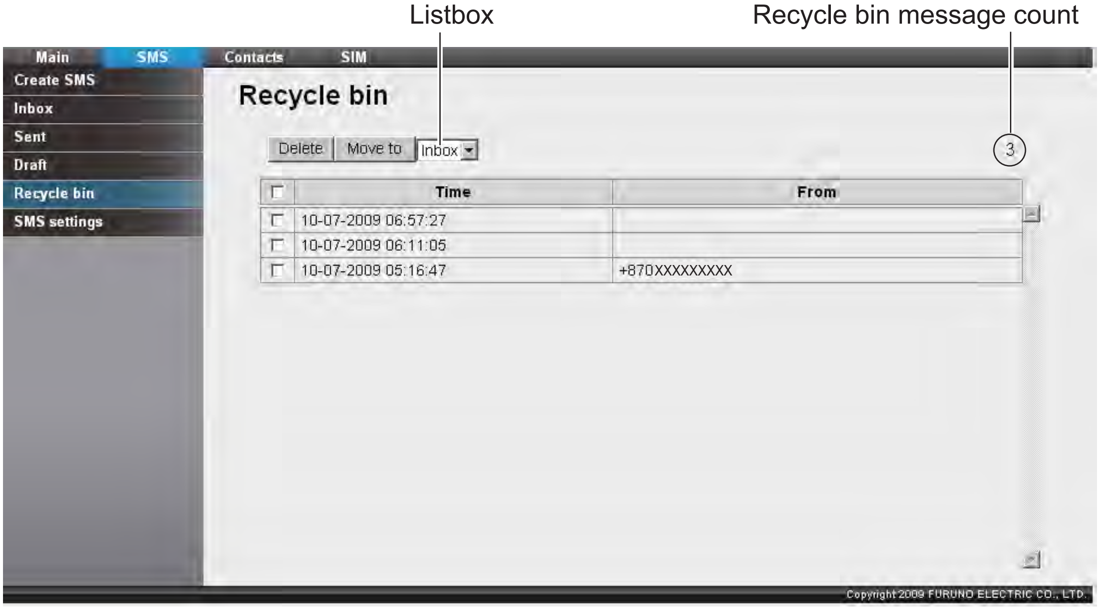
Sort messages in the box to list from either newest->oldest or oldest->newest.

1. Click [SMS] in the menu bar.
2. Click the box to arrange: [Inbox], [Sent], [Draft], or [Recycle bin].
3. Click [Time] at the top of the list. The icon ▲ or ▼ appears beside [Time].
4. Click [Time] again to change between ▲ and ▼.
   If ▲: List the messages from oldest to newest.
   If ▼: List the messages from newest to oldest.
   Note: Click the [From] field (Inbox, Recycle bin) or the [To] field (Sent, Draft) to change the list from descending to ascending order, or vice versa.

How to move messages from Recycle Bin to another box

Move a single message, multiple messages, or all messages in the [Recycle bin] to another box.

1. Click [SMS] in the menu bar.
2. Click [Recycle bin]. The following screen appears:


Listbox
Recycle bin message count
Main
SMS
Contacts
SIM
Create SMS
Inbox
Sent
Draft
Recycle bin
SMS settings
Delete
Move to
Inbox
3
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Recycle bin

☐	Time	From
☐	10-07-2009 06:57:27	
☐	10-07-2009 06:11:05	
☐	10-07-2009 05:16:47	+870XXXXXXXXX

3. Put a [✓] in the box on the left side of the message(s) to move to another box. To select all messages, put a [✓] in the box on the left side of [Time] at the top of the list.
4. Click the list box, and select the destination box ([Inbox], [Sent], or [Draft]).
5. Click the [Move to] button.

Note: It is possible to move a message to another box from the [Recycle bin] when the message is open for viewing.

How to delete a message from the Recycle Bin

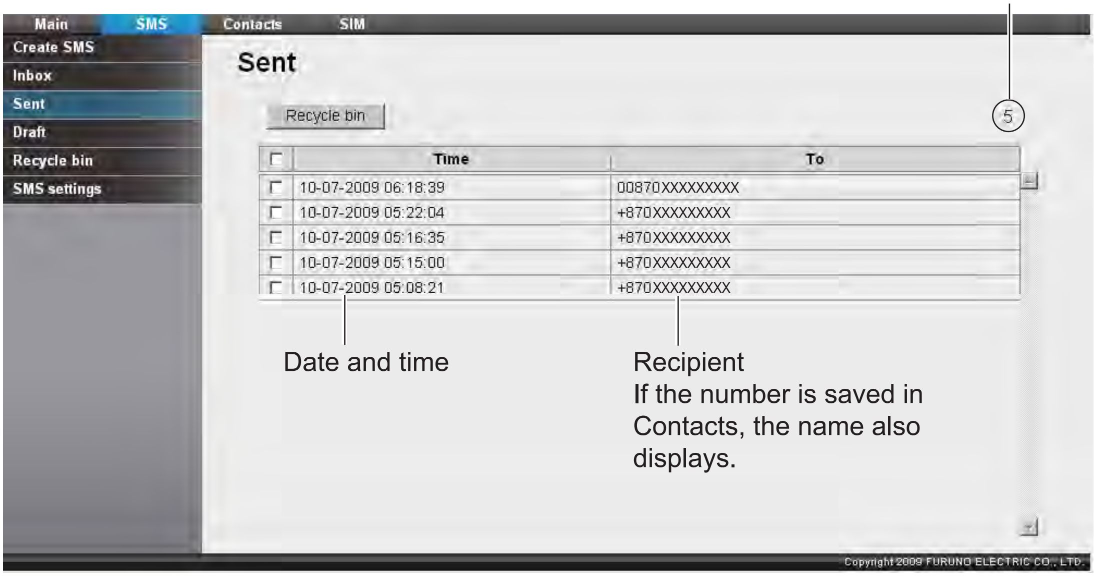
Delete a single message, multiple messages or all messages from the [Recycle bin].

1. Click [SMS] in the menu bar.
2. Click [Recycle bin].
3. Put a [✓] in the box on the left side of the message(s) to delete. To select all messages, put a [✓] in the box beside the [Time] title. All messages are selected.
4. Click the [Delete] button. The confirmation message "Delete?" appears.
5. Click the [Delete] button. The message “Delete completed” is displayed.
6. Click the [OK] button to delete the message(s).

5.5.5 How to use the Sent box

Use the Sent message box to edit and resend sent messages.

1. Click [SMS] in the menu bar.
2. Click [Sent]. The Sent box is displayed as shown:


Main
SMS
Contacts
SIM
Create SMS
Inbox
Sent
Draft
Recycle bin
SMS settings
Sent
Recycle bin
5
Copyright 2009 FURUNO ELECTRIC CO., LTD.

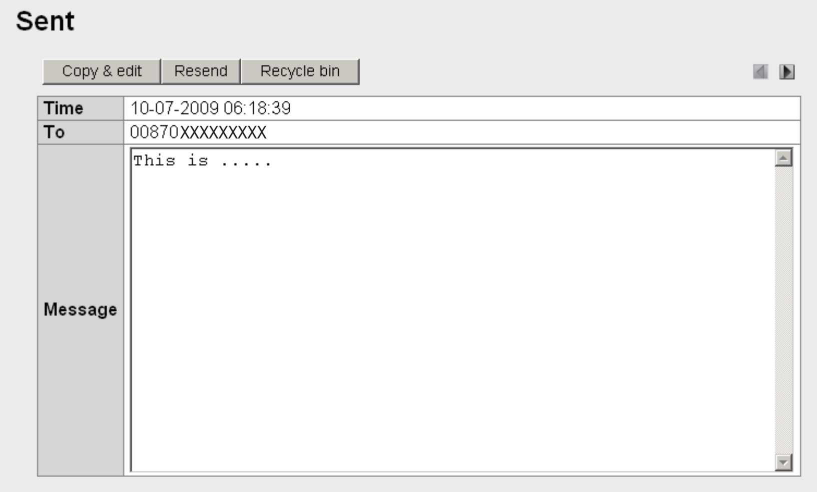
☐	Time	To
☐	10-07-2009 06:18:39	00870XXXXXXXXX
☐	10-07-2009 05:22:04	+870XXXXXXXXX
☐	10-07-2009 05:16:35	+870XXXXXXXXX
☐	10-07-2009 05:15:00	+870XXXXXXXXX
☐	10-07-2009 05:08:21	+870XXXXXXXXX

Sent box message count

Date and time

Recipient
If the number is saved in Contacts, the name also displays.

3. Click the sent date and time to select the message to edit/re-send. The message opens.


Sent
Copy & edit
Resend
Recycle bin

Time 10-07-2009 06:18:39
To 00870XXXXXXXXX
Message This is .....

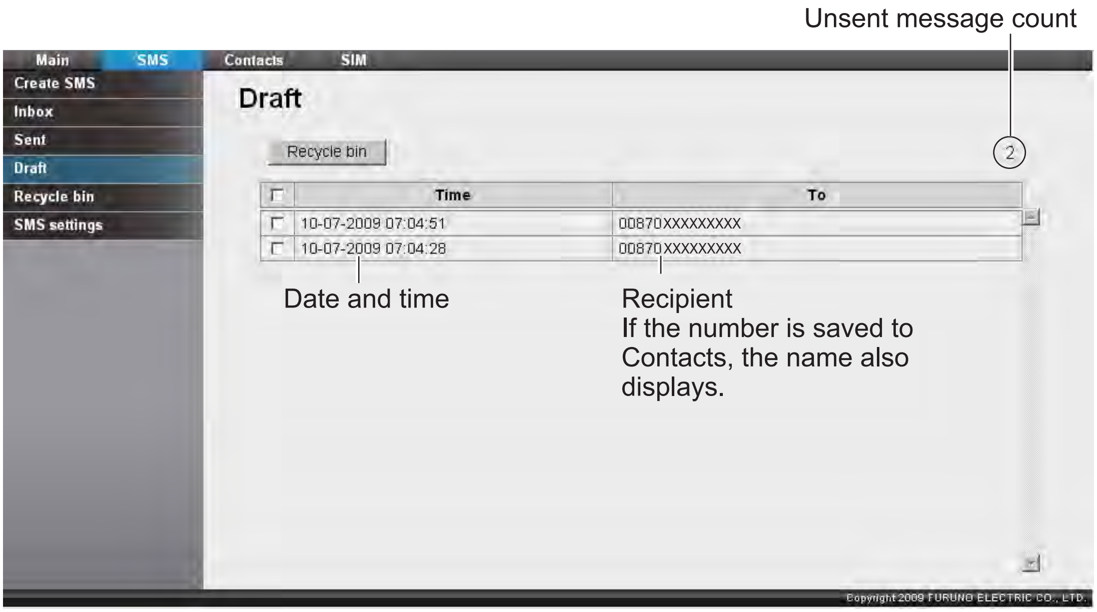
Refer to the following table for operation:

Operation	Procedure
Edit the message and send to the same recipient or another recipient.	1) Click [Copy & edit]. The Create SMS screen opens with the original message in the [Message] field. 2) Enter another address in the [To] field to send to another recipient. 3) Edit the message in the [Message] field. 4) Click the [Send] button to send the message. 5) Click the [OK] button.
Send the message to the same recipient.	1) Click the [Resend] button. 2) Click the [OK] button.

5.5.6 How to use the Draft box

You can save un-sent messages to the Draft box to edit or send later.

1. Click [SMS] in the menu bar.
2. Click [Draft]. The Draft box is displayed as shown:


Main
SMS
Contacts
SIM
Create SMS
Inbox
Sent
Draft
Recycle bin
SMS settings
Draft
Recycle bin
②
Copyright 2009 FURUNO ELECTRIC CO., LTD.

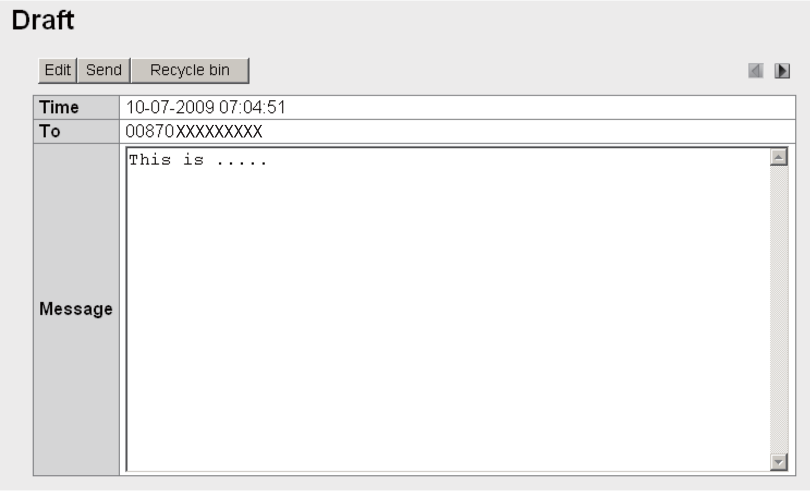
☐	Time	To
☐	10-07-2009 07:04:51	00870XXXXXXXXX
☐	10-07-2009 07:04:28	00870XXXXXXXXX

Unsent message count

Date and time

Recipient
If the number is saved to Contacts, the name also displays.

3. Click the saved message to use. The message opens.


Draft
Edit
Send
Recycle bin

Time	10-07-2009 07:04:51
To	00870XXXXXXXXX
Message	This is .....

Refer to the following table:

Operation	Procedure
Edit the message and send.	1) Click [Edit]. The Create SMS screen opens with the original message in the [Message] field. 2) Edit the message in the [Message] field. 3) Click the [Send] button to send the message. 4) Click the [OK] button.
Send the message	1) Click the [Send] button. 2) Click the [Ok] button.

5.5.7 How to set the signature and password

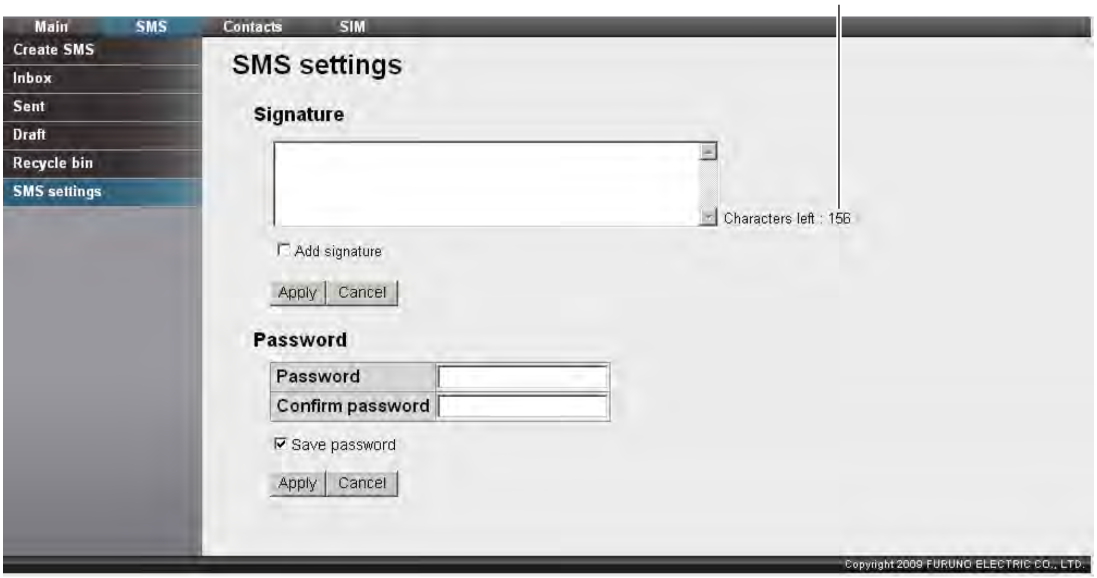
You can set up the SMS signature and password in the SMS Settings screen.

Signature

Add a signature to all SMS messages automatically as follows:

1. Click [SMS] in the menu bar.
2. Click [SMS settings]. The [SMS settings] screen is displayed as shown:

Remaining character count


Main
SMS
Contacts
SIM
Create SMS
Inbox
Sent
Draft
Recycle bin
SMS settings
SMS settings
Signature
Apply
Cancel
Password
Password
Confirm password
Apply
Cancel
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Characters left : 156

☐ Add signature

☑ Save password

3. To automatically add a signature, place a [✓] in the checkbox beside [Add signature]. Leave the checkbox empty not to add a signature. If adding a signature, go to step 4. If not adding a signature go to step 5.
4. Enter a signature in the Signature box. (Maximum 156 characters).
5. Click the [Apply] button. The message "Setting completed." is displayed.
6. Click the [OK] button.

Password

To activate password to access the SMS top screen, do the following.

1. Click [SMS] in the menu bar.
2. Click [SMS settings] in the sub menu area.
3. Erase the [✓] in the [Save password] checkbox.
4. Click [Apply]. The message "Setting completed." appears.
5. Click the [OK] button. Hereafter, a password is required to open the SMS menu.

5.6 Data Connection

There are two methods for IP packet communication service:

Service	Description	Connection speed	Payment method	Use
Standard IP packet communication (Best effort packet)	Speed of the communication service is not guaranteed. Since the bandwidth is shared by vessels, communication speed varies depending on the number of vessels that communicate at the same time.	• Max. 284 kbps (FELCOM 250) • Max. 432 kbps (FELCOM 500)	Fee based on amount of data	• Email • Internet / Intranet • Update ship voyage information • Database search • Electronic trade • Web browsing
Streaming IP packet communication	Service guarantees connection speed.	Can select 8, 16, 32, 64, 128, 256 kbps (256 kbps FELCOM 500 only).	Fee based on amount of connection time	• Video conferences or moving picture delivery* • Transmit photographic data* • Streaming video*

*: If you are using streaming IP packet communication, the video and audio do not stutter if the bandwidth is within guaranteed area. However, if you can accept broken voice and video, you can use the standard IP communication. When selecting which service to use, consider whether stable communication or communication fee is a priority.

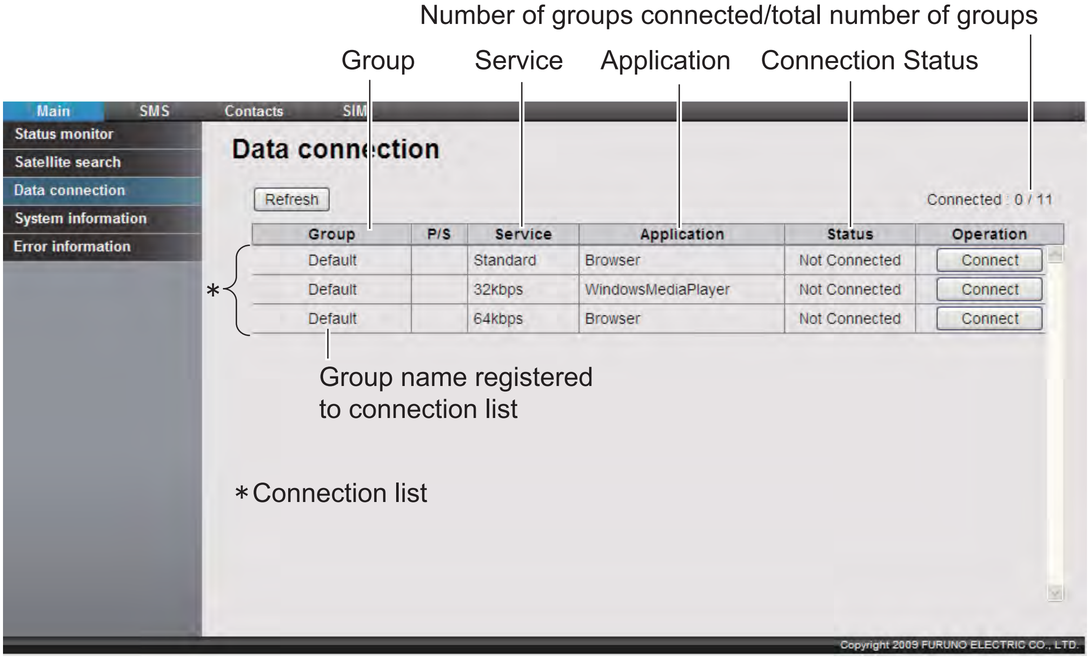
Note: The cost of streaming IP packet communication may be unexpectedly high, so please use caution.

How to connect to the internet

Follow the procedure shown below to connect to the internet.

Note: You cannot connect to the internet if the main display of the web software shows "Data connection No permisison".

1. Click [Main] in the menu bar.
2. Click [Data connection] in the sub menu to show the following display. See section 6.1.5 for how to create a connection list.
   Your Data connection list looks something like the one shown below. This list shows the groups registered in the PC in use. See section 6.1.5 for how to create the connection list. If you are logged in as Adminstrator, the [Disconnect all connection] button appears, which lets you disconnect all connections.

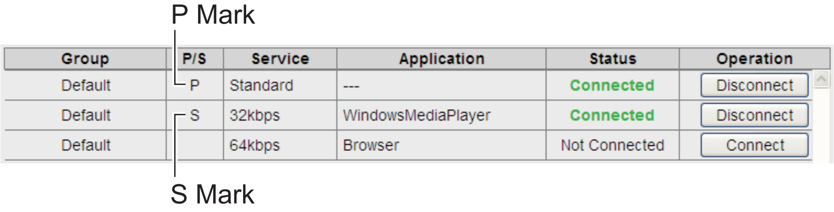

Number of groups connected/total number of groups
Group
Service
Application
Connection Status
Main
SMS
Contacts
SIM
Status monitor
Satellite search
Data connection
System information
Error information
Refresh
Group name registered to connection list
*Connection list
Copyright 2009 FURUNO ELECTRIC CO., LTD.

Data connection

Connected : 0 / 11

Group	P/S	Service	Application	Status	Operation
Default		Standard	Browser	Not Connected	Connect
Default		32kbps	WindowsMediaPlayer	Not Connected	Connect
Default		64kbps	Browser	Not Connected	Connect

   Note: The [Refresh] button updates the list.
3. Click the [Connect] button of the service to use. When connecting, the message "Now connecting..." displays. When connected, the message "***connection success." appears.
   Note: If connection fails, the message "***connection failure." appears.
4. Click the [OK] button to close the message. The Status window shows "Not connected" and the label on the button in the Operation windo shows "Connect."
5. To use multiple data services, repeat steps 3 - 4.
   Note: It is not possible to use the same application that is already connected. Disconnect the service, and reconnect.
   When connected to the internet, the connection list is displayed as shown:


P Mark
S Mark

Group	P/S	Service	Application	Status	Operation
Default	P	Standard	---	Connected	Disconnect
Default	S	32kbps	WindowsMediaPlayer	Connected	Disconnect
Default		64kbps	Browser	Not Connected	Connect

Example: Standard IP packet, 32 kbps streaming IP packet communications

- The first service for each group has a P mark, and "---" appears in the [Application] field. The second and subsequent service for each group has an S mark. In the above connection list, Standard IP Packet Data Connection Service is connected first.
- In the [Status] field, "Not connected" changes to "Connected" (displays in green).
- The display in the [Operation] field changes from “Not Connected” to “Connected”.

6. Open the desired application software and begin data communication. Applications are not limited to only those marked with the P mark (applications preset at section 6.1.5.) You can use any software that appears after the 2nd application in the list. For example, in the connection list above, Windows Media Player 32 kbps streaming IP packet communication is shown. All other applications can be used except Windows Media Player.

How to disconnect from the internet

Do the following to disconnect from the internet:

1. Click [Main] in the menu bar.
2. Click [Data connection]. The [Data connection] screen is displayed.
3. Click [Disconnect] for the services to disconnect. When disconnecting, the message "Now disconnecting..." is displayed. When disconnected, the message "***disconnection success." is displayed. (***: Service and application)

   Note 1: If you disconnect a service marked with a P mark, all other connected services will disconnect.

   Note 2: If the disconnection fails, "***disconnection failure." is displayed.
4. Click the [OK] button to close the message. The [Status] field displays "Not Connected", the [Operation] button shows "Connect".

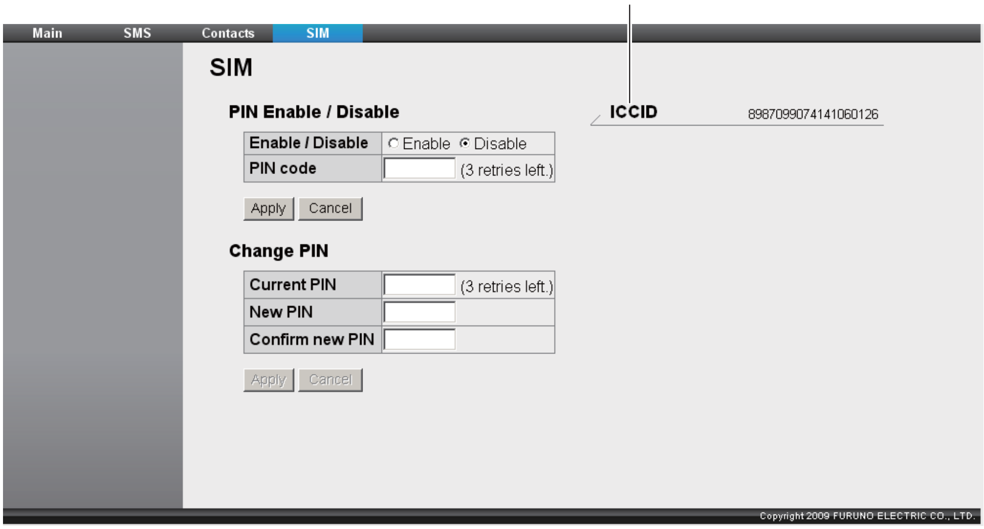
5.7 SIM Card Settings

You can update SIM card information and change PIN code.

How to update SIM card information

Depending on SIM card type, it is necessary to enter a PIN code when power is turned on. It is possible to update the SIM card information.

1. Click [SIM] in the menu bar to show the SIM screen. If no card is input, or if the card is not a Fleetbroadband type, the message "No SIM card / type incorrect." appears.



SIM card identification number

SIM

PIN Enable / Disable

Enable / Disable	○ Enable ● Disable
PIN code	(3 retries left.)

ICCID 8987099074141060126

Change PIN

Current PIN	(3 retries left.)
New PIN	
Confirm new PIN	

2. Enter the PIN code in the [PIN code] field. The characters are displayed as black circles (●).
3. Click [Enable] or [Disable].
   [Enable]: When power on, PIN code is required hereafter.
   [Disable]: When power on, PIN code is not required hereafter.
4. Click the [Apply] button. If PIN is enabled in step 3, the message "Setting completed. PIN is prompted when CmmUnt is turned on." is displayed.
5. Click the [OK] button.

How to change the PIN code

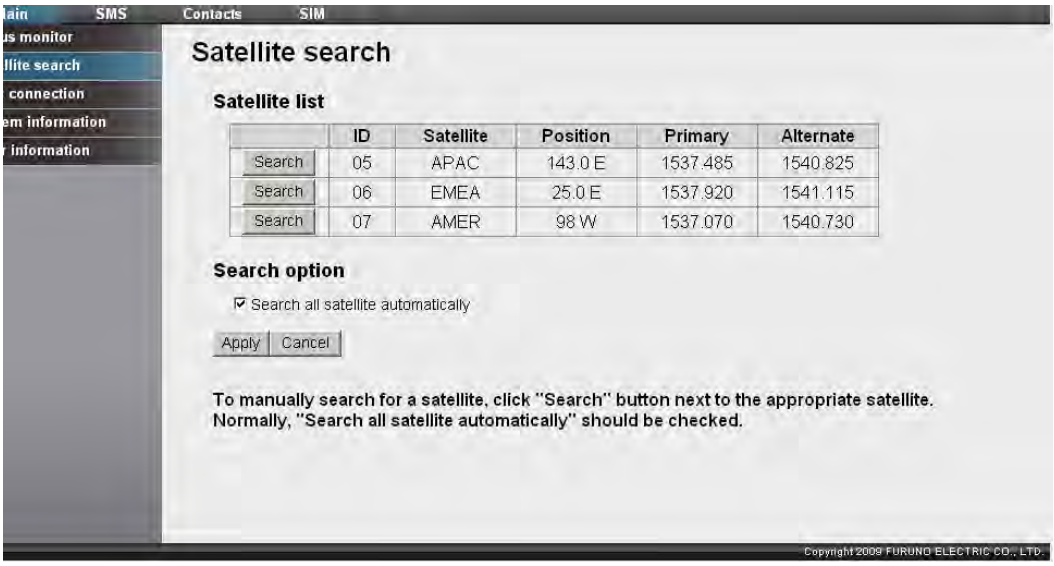
If PIN code is enabled, you can change the PIN code. Be sure to write down the PIN code and do not forget it.

1. Click [SIM] in the menu bar.
2. Enter the current PIN code in the [Current PIN] field.
3. Enter the new PIN code in the [New PIN] field. The PIN code must be between 4 - 8 characters.
4. Re-enter the new PIN code in the [Confirm new PIN] field.
5. Click the [Apply] button.
   Note: An error occurs if any of the following is done: - Current PIN code is entered incorrectly. "PIN code is invalid." - New PIN code entered at step 3 and 4 is different. "New PIN code is invalid."
6. Click the [OK] button.

5.8 Manual Satellite Search

FELCOM 250/500 is set to automatically search and track the closest satellite. It is also possible to manually search for a satellite.

1. Click [Main] in the menu bar.
2. Click [Satellite search]. See the next page for the service area for FleetBroadband.
   - [ID]: Satellite ID
   - [Satellite]: Satellite name
   - [Position]: Satellite position (longitude)
   - [Primary]: Primary global satellite channel frequency
   - [Alternate]: Alternate global satellite channel frequency


ain
SMS
Contacts
SIM
us monitor
llite search
connection
em information
information
Search
Search
Search
Apply
Cancel
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Satellite search

Satellite list

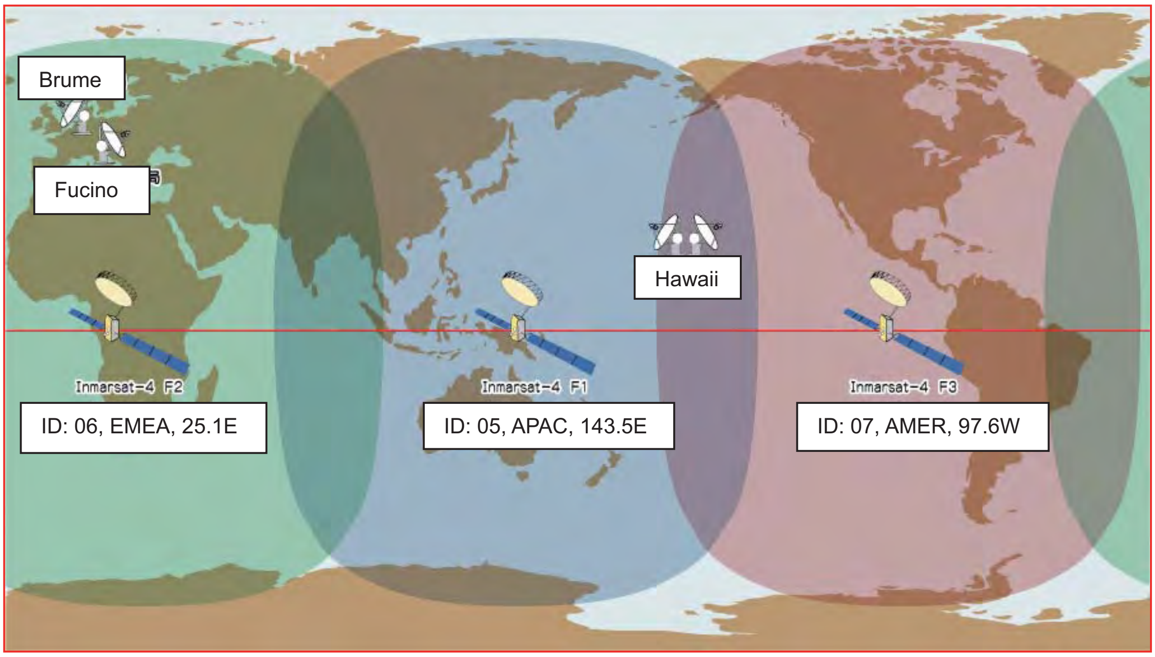
	ID	Satellite	Position	Primary	Alternate
Search	05	APAC	143.0 E	1537.485	1540.825
Search	06	EMEA	25.0 E	1537.920	1541.115
Search	07	AMER	98 W	1537.070	1540.730

Search option

☑ Search all satellite automatically

To manually search for a satellite, click "Search" button next to the appropriate satellite.
Normally, "Search all satellite automatically" should be checked.

3. Click [Search] to start the Satellite search. The message "Satellite search start." is displayed.
4. Click the [OK] button.
   Note: Put a [✓] in the checkbox next to [Search all satellite automatically] to automatically search for a Satellite when tracking is lost.


Brume
Fucino
Hawaii
Inmarsat-4 F2
Inmarsat-4 F1
Inmarsat-4 F3
ID: 06, EMEA, 25.1E
ID: 05, APAC, 143.5E
ID: 07, AMER, 97.6W

AMER (West Atlantic, Eastern Pacific, Americas)

EMEA (Western Asia, Africa, Eastern Atlantic)

APAC (Western Pacific, Southeast Asia, Oceania)

6. WEB FUNCTIONS

This chapter covers how to access Communication Unit settings, connection information, and log. User must login as **Administrator** to access these functions.

Note: Communication may not be possible if setting are wrong. Settings should be performed by an experienced administrator. Also, be sure to log out after performing settings. (refer to 6.1.1)

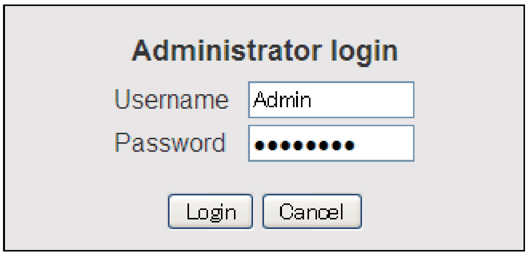
6.1 Communication Unit Settings

In the menu bar, click [Settings] to access Basic, PBX, Network, SMS server, Password and Initialize settings. For information on [Basic], refer to the Installation Manual. Refer to section 7.7.2 for initialization.

6.1.1 Administrator login

Do as follows to login as Administrator.

1. Click the [admin login] button.
2. Enter "Admin" in the Username box and "01234567" in the Password box.
   The factory-set Administrator password is 01234567. To change the password, see section 6.1.9.The username cannot be changed.



Administrator login

Username: Admin

Password: ••••••••

   Note: If you forgot the Administrator password, consult your dealer for advice. This operation requires restoration of the default settings. See section 7.7.2.

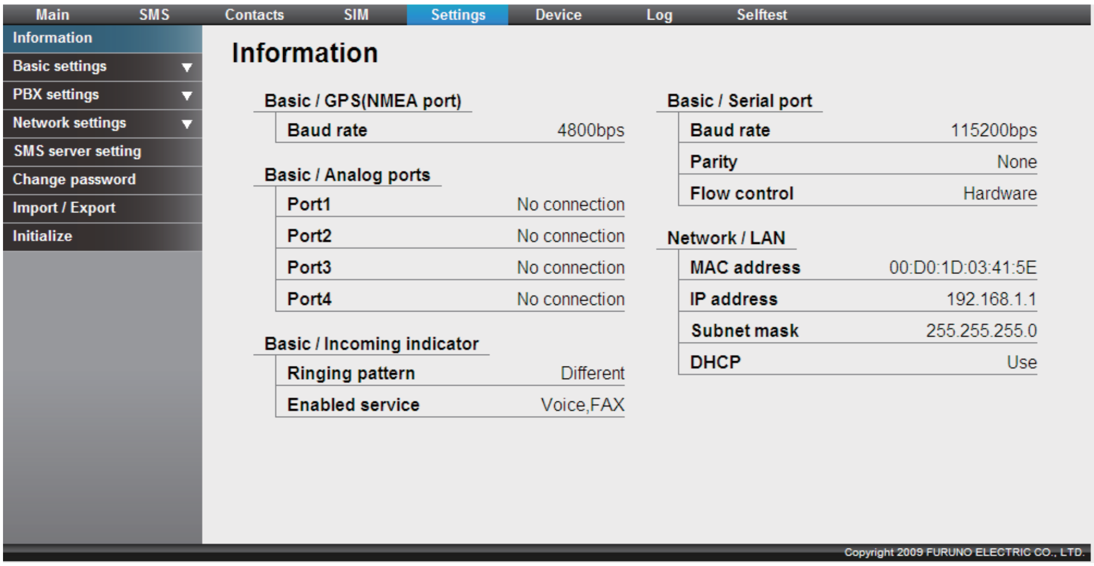
3. Click the [Login] button. Settings, Device, Log, and Selftest appear in the menu bar, and [login] is replaced with [logout].
4. To logout after completing all settings, click the [admin logout] button. Settings, Device, Log, and Selftest disappear from the menu bar, and [logout] is replaced with [login].

Note: The system automatically logs you out when there is no key operation in 15 minutes.

6.1.2 How to display the Information screen

You can view information of GPS, Analog ports, Incoming Indicator, and Serial port in the [Basic] submenu, and LAN individual settings in the [Network Settings] submenu.

1. Click [Settings] in the menu bar. The Settings sub menu is displayed on the left hand side.
2. When the Information screen is not displayed, click [Information] in the sub menu to display the Information screen.


Main
SMS
Contacts
SIM
Settings
Device
Log
Selftest
Information
Basic settings
PBX settings
Network settings
SMS server setting
Change password
Import / Export
Initialize
Copyright 2009 FURUNO ELECTRIC CO., LTD.

Information

Basic / GPS(NMEA port)

Baud rate	4800bps

Basic / Analog ports

Port1	No connection
Port2	No connection
Port3	No connection
Port4	No connection

Basic / Incoming indicator

Ringing pattern	Different
Enabled service	Voice,FAX

Basic / Serial port

Baud rate	115200bps
Parity	None
Flow control	Hardware

Network / LAN

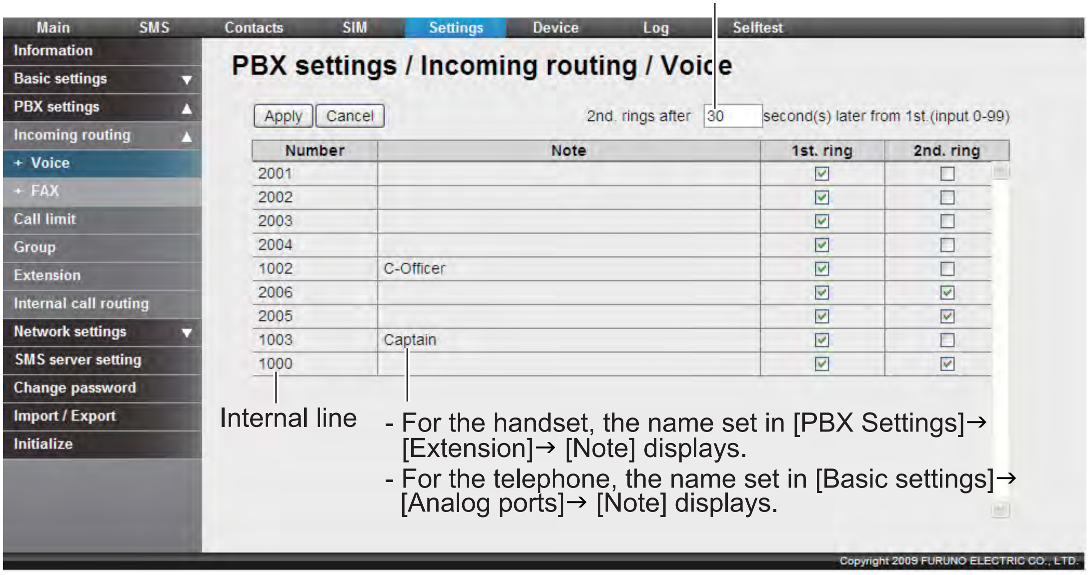
MAC address	00:D0:1D:03:41:5E
IP address	192.168.1.1
Subnet mask	255.255.255.0
DHCP	Use

6.1.3 PBX (SIP Server) setting

How to set incoming route

Set primary (and secondary) terminal for Fax and external calls. Priority terminals will ring first. If a call is not answered, secondary terminals will ring.

1. Click [Settings] in the menu bar.
2. Click [PBX settings].
3. Click [Incoming routing].
4. Click [Voice] or [FAX].
   [Voice]: Adjust settings for incoming phone call.
   [FAX]: Adjust settings for incoming Fax.


Main
SMS
Contacts
SIM
Settings
Device
Log
Selftest
Information
Basic settings
PBX settings
Incoming routing
+ Voice
+ FAX
Call limit
Group
Extension
Internal call routing
Network settings
SMS server setting
Change password
Import / Export
Initialize
Apply
Cancel
Copyright 2009 FURUNO ELECTRIC CO., LTD.

Set ring duration time

PBX settings / Incoming routing / Voice

2nd. rings after 30 second(s) later from 1st.(input 0-99)

Number	Note	1st. ring	2nd. ring
2001		☑	☐
2002		☑	☐
2003		☑	☐
2004		☑	☐
1002	C-Officer	☑	☐
2006		☑	☑
2005		☑	☑
1003	Captain	☑	☐
1000		☑	☑

Internal line

- For the handset, the name set in [PBX Settings]→ [Extension]→ [Note] displays.
- For the telephone, the name set in [Basic settings]→ [Analog ports]→ [Note] displays.

5. Place a [✓] in the [1st. ring] check box of the terminal to ring first. Do not put a [✓] if terminal is not to ring first.
6. Place a [✓] in the [2nd. ring] check box of the terminals to ring second.
7. Enter the ring duration time (1st ring duration time, 0-99 sec.).
   Note: If set to 0 sec., [2nd ring] is turned off.
8. Click the [Apply] button. The message "Setting completed." appears.
9. Click the [OK] button.

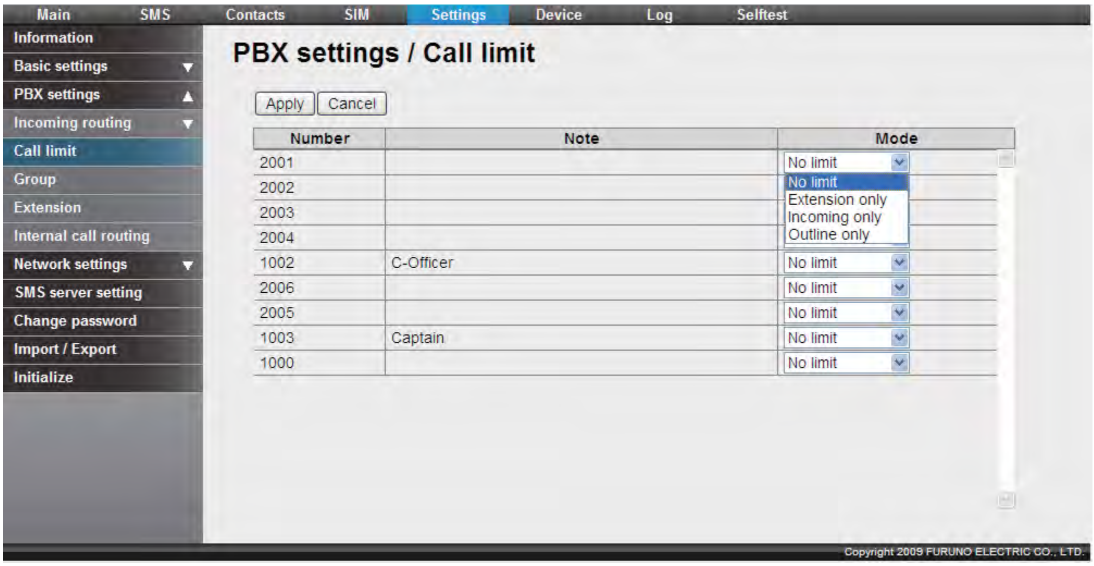
How to limit transmission

Transmission limit can be set for each terminal. Factory setting is [No limit].

- [Extension only]: Transmission available for extension call only.
- [Incoming only]: Outgoing call not available. Incoming call only.
- [Outline only]: Transmission available for external call only.

1. Click [Settings] in the menu bar.
2. Click [PBX settings].
3. Click [Call limit].

4. Click the list box of the terminal to edit. The list is displayed as shown in the following illustration:


Main
SMS
Contacts
SIM
Settings
Device
Log
Selftest
Information
Basic settings
PBX settings
Incoming routing
Call limit
Group
Extension
Internal call routing
Network settings
SMS server setting
Change password
Import / Export
Initialize
Apply
Cancel
No limit
Extension only
Incoming only
Outline only
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PBX settings / Call limit

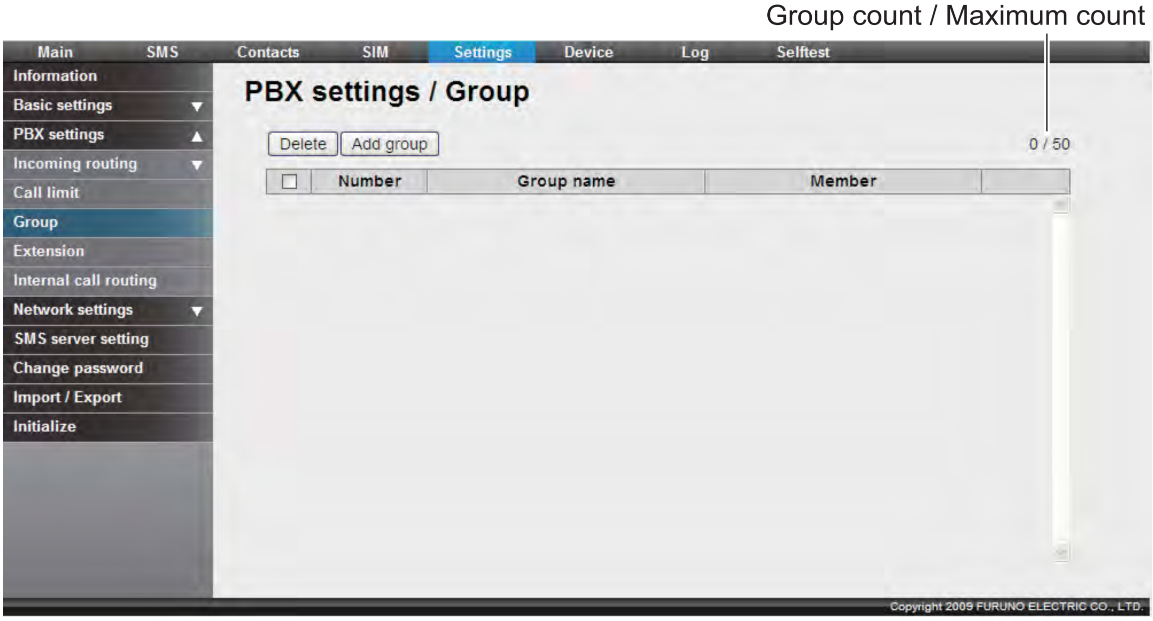
Number	Note	Mode
2001		No limit
2002		
2003		
2004		
1002	C-Officer	No limit
2006		No limit
2005		No limit
1003	Captain	No limit
1000		No limit

5. Click the limit mode to use. To make internal and external calls available, select [No limit].
6. Click the [Apply] button. The message "Setting completed." is displayed.
7. Click the [OK] button.

How to register a group

Register numbers to a group and make a group call (internal only). For example, add numbers 1001-1010 to group 9000, and all numbers from 1001-1010 can be called at the same time. The first recipient to answer receives the call, and the other numbers stop ringing. A maximum of 50 groups can be registered. Only members registered in [PBX Settings]-> [Extension] can be registered.

1. Click [Settings] in the menu bar.
2. Click [PBX settings].
3. Click [Group]. The following Group screen appears.


Group count / Maximum count
Main
SMS
Contacts
SIM
Settings
Device
Log
Selftest
Information
Basic settings
PBX settings
Incoming routing
Call limit
Group
Extension
Internal call routing
Network settings
SMS server setting
Change password
Import / Export
Initialize
Delete
Add group
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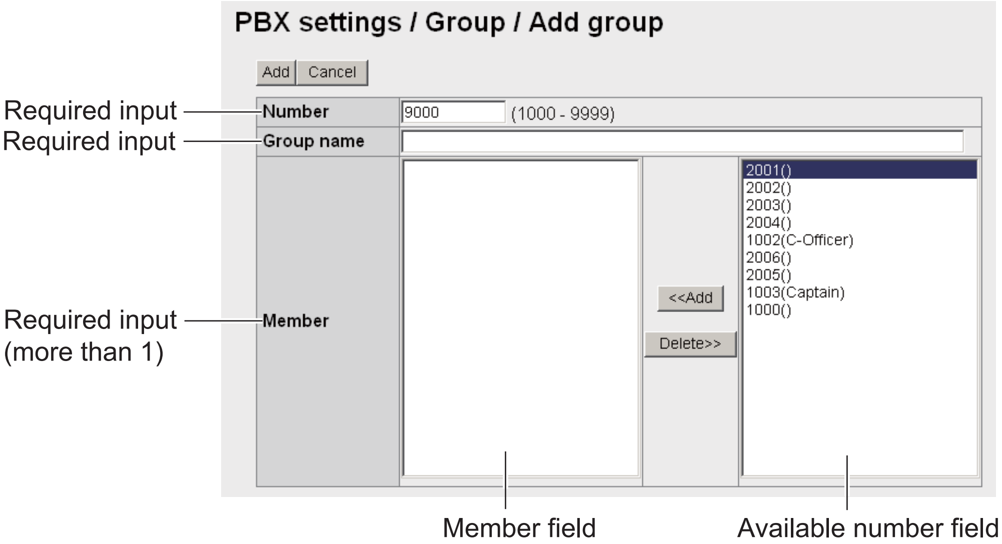
PBX settings / Group

0 / 50

☐	Number	Group name	Member

4. Click [Add group]. The following New Registry screen appears. [Number] field displays the lowest 9000 number not in use. If using this number, go to step 6. If entering a new number, go to step 5.


Required input
Required input
Required input
(more than 1)
Add
Cancel
<<Add
Delete>>
Member field
Available number field

PBX settings / Group / Add group

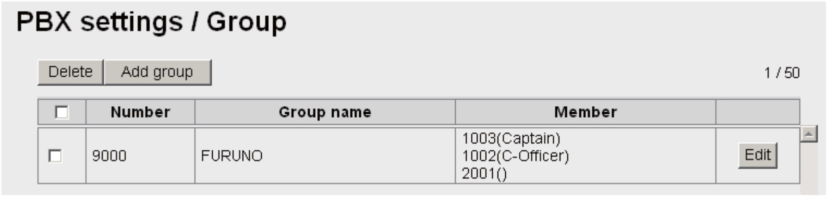
Number: 9000 (1000 - 9999)

Group name:

Member:

2001()
2002()
2003()
2004()
1002(C-Officer)
2006()
2005()
1003(Captain)
1000()

5. In the [Number] field, enter the group number (1000 - 9999).
6. Enter a name for the group in the [Group name] field (max. 50 characters).
7. Add members to the group as follows:
    1) Click desired number in the available numbers list.
    2) Click the [<<Add] button to add the selected number to the member list.
    Note: If you added a wrong number, select the number in the member list and click [Delete >>] to erase the number from list.
    3) Repeat steps 1 and 2 to add more members to group.
8. Click the [Add] button. The message "Completed." appears.
Note: The following messages are displayed when you try to register a number that has already been registered:
    - "This number has already been registered": The number already exists.
9. Click the [OK] button. The Group screen is displayed with the new group.


Delete
Add group
Edit

PBX settings / Group

1 / 50

☐	Number	Group name	Member	
☐	9000	FURUNO	1003(Captain) 1002(C-Officer) 2001()	Edit

How to edit the group number

1) Display the group screen.
2) Select the group number to edit, and click the [Edit] button.
3) Edit the group number, name or members.
4) Click the [Save] button.
5) Click the [OK] button.

How to delete a group

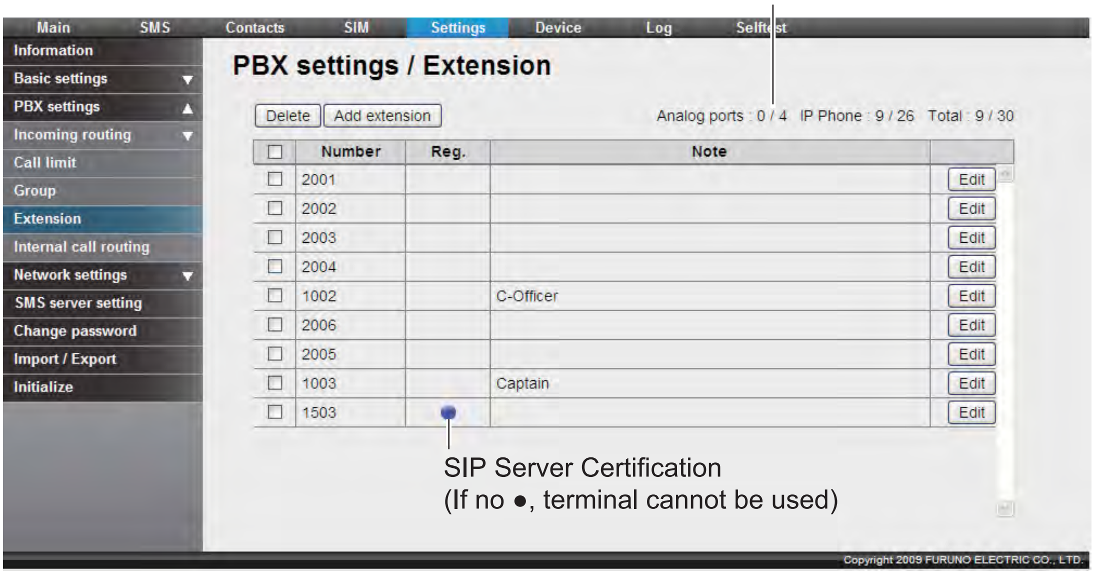
1) Display the Group screen.
2) Put a [✓] in the checkbox beside the group number to delete. To delete all group numbers, put a [✓] in the checkbox beside [Number] to select all.
3) Click the [Delete] button.
4) Click [OK].
5) Click [OK] again to close the message window.

How to register extension numbers

If you install a new handset or analog telephone, register the internal line number (maximum 30 numbers).

1. Click [Settings] on the menu bar.
2. Click [PBX settings].
3. Click [Extension], and the following screen appears.

No. of entries made / Max. no. of entries
Analog ports: telephone
IP Phone: handset
Total: telephone + handset


Main
SMS
Contacts
SIM
Settings
Device
Log
Selftest
Information
Basic settings ▼
PBX settings ▲
Incoming routing ▼
Call limit
Group
Extension
Internal call routing
Network settings ▼
SMS server setting
Change password
Import / Export
Initialize
Delete
Add extension
Edit
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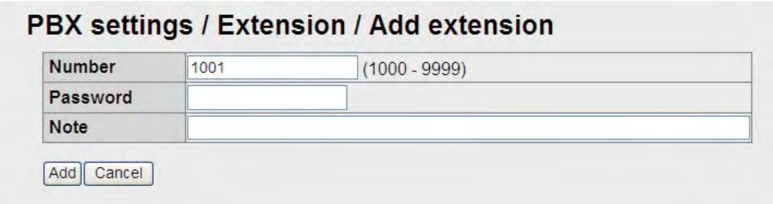
PBX settings / Extension

Analog ports : 0 / 4 IP Phone : 9 / 26 Total : 9 / 30

☐	Number	Reg.	Note	
☐	2001			Edit
☐	2002			Edit
☐	2003			Edit
☐	2004			Edit
☐	1002		C-Officer	Edit
☐	2006			Edit
☐	2005			Edit
☐	1003		Captain	Edit
☐	1503	●		Edit

SIP Server Certification
(If no ●, terminal cannot be used)

4. Click the [Add extension] button. The screen shown below appears. The number that is shown in the [Number] box is the youngest empty unused extension number. To use that number, go to step 6. To change the extension number, go to step 5.



PBX settings / Extension / Add extension

Number	1001	(1000 - 9999)
Password		
Note		

5. Change the extension number (1000 - 9999) in the [Number] box.

6. Enter the extension number password in the [Password] box. A maximum of eight characters (capital letters only) can be entered.

   Note: Be careful not to lose the extension number password. Write it down. This password is necessary for setting the SIP password.
7. Enter a name for the extension number in the [Note] box. A maximum of 50 characters can be used (use an easy-to-remember name, like the location of the extension).
8. Click the [Add] button, and the message "Completed" appears.

   Note: If the extension number is already registered, the error message "This number has already been registered." appears.
9. Click the [OK] button to erase the message.

How to edit extension numbers

You can edit the extension number, password, etc.

1. Display the Extension screen.
2. Click the [Edit] button at the right side of the extension to edit.
3. Edit extension number, extension number password (SIP password). If the extension number selected at step 2 is from an analog port, the [Password] box does not appear.
4. Click the [Save] button.
5. Click the [OK] button to erase the message.
6. If you edit the extension number, or extension number password (SIP password) in step 3, set the same value in the [Client set.] menu of the handset (refer to 3.5.3).

How to delete extension numbers

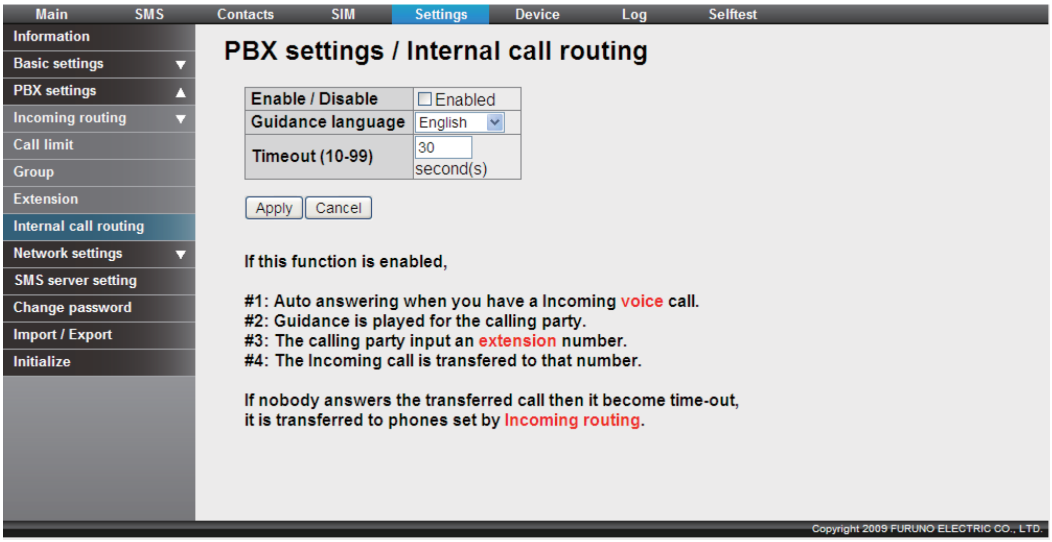
You can delete a single extension number or all extension numbers.

1. Display the Extension screen.
2. Put a check [✓] in the check box at the left side of the extention(s) to delete. (Check as many numbers as desired.) To delete all extension numbers, put a check in the [Number] checkbox at the top of the screen. This puts a checkmark on all numbers.
3. Click the [Delete] button.
4. Click the [OK] button.
5. Click the [OK] button again.

How to set internal call routing

When a voice call (only 4kbps AMBE+2) is received, the call can be transferred to an internal phone automatically. Follow the procedures to set up the internal call routing.

1. From the menu bar, click [Settings] - [PBX settings] - [Internal call routing].


Main
SMS
Contacts
SIM
Settings
Device
Log
Selftest
Information
Basic settings
PBX settings
Incoming routing
Call limit
Group
Extension
Internal call routing
Network settings
SMS server setting
Change password
Import / Export
Initialize
Apply
Cancel
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PBX settings / Internal call routing

Enable / Disable	☐ Enabled
Guidance language	English
Timeout (10-99)	30 second(s)

If this function is enabled,

#1: Auto answering when you have a Incoming voice call.
#2: Guidance is played for the calling party.
#3: The calling party input an extension number.
#4: The Incoming call is transfered to that number.

If nobody answers the transferred call then it become time-out,
it is transferred to phones set by Incoming routing.

2. To enable the internal call routing function, put a checkmark in the Enable/Disable box. With no checkmark this function is deactivated, and a call is routed according to "How to set incoming route" on page 6-2.
3. Select a guidance language; English or Japanese.
4. Set a timeout time between 10 seconds to 99 seconds. If nobody answers the transferred call during the timeout time, this call is transferred again to phones specified for incoming routing
5. Click the [Apply] button to activate the internal call routing.

When a voice call is received, the FELCOM 250/500 plays guidance to the calling party. Then, the calling party inputs an extension number. The call is then transferred to that number.

▶ Operation at calling side in the automatic transfer function

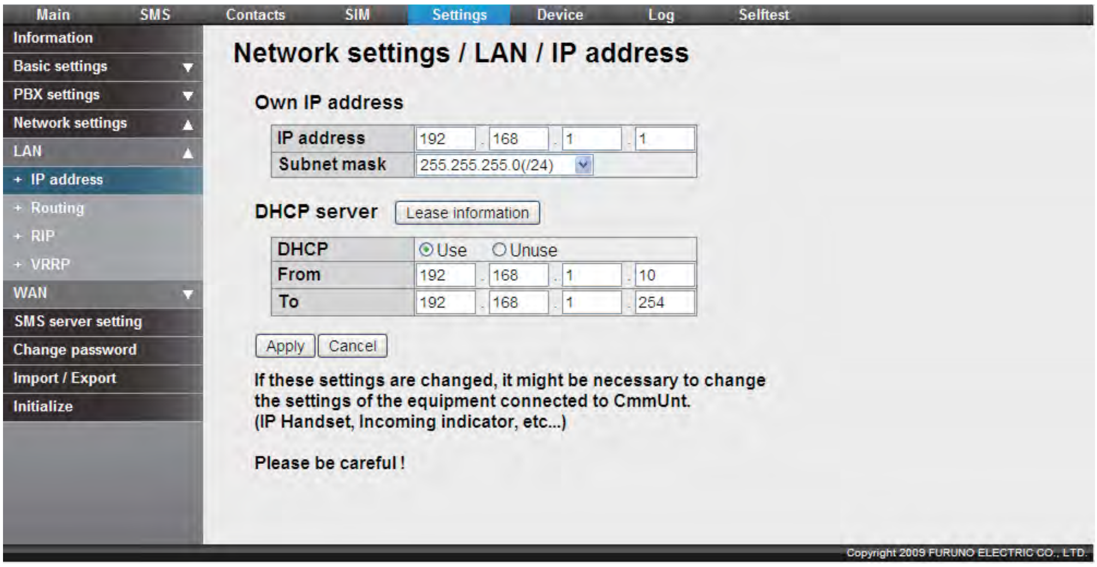
1) Call this vessel (AMBE+2). You are requested to dial extension number.
2) Dial extension number (4 digits). The extension number is called.
3) When the party answers, pick up the receiver.
4) Hang up the receiver after completing the call.

6.1.4 LAN settings

The LAN Settings must be performed by the network manager.

How to set the LAN IP address

Click [Settings] in the menu bar, the [Network settings], [LAN] and [IP address] in the sub-menu. The following screen appears.


Main
SMS
Contacts
SIM
Settings
Device
Log
Selftest
Information
Basic settings
PBX settings
Network settings
LAN
+ IP address
+ Routing
+ RIP
+ VRRP
WAN
SMS server setting
Change password
Import / Export
Initialize
Lease information
Apply
Cancel
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Network settings / LAN / IP address

Own IP address

IP address	192 . 168 . 1 . 1
Subnet mask	255.255.255.0(/24)

DHCP server

DHCP	● Use ○ Unuse
From	192 . 168 . 1 . 10
To	192 . 168 . 1 . 254

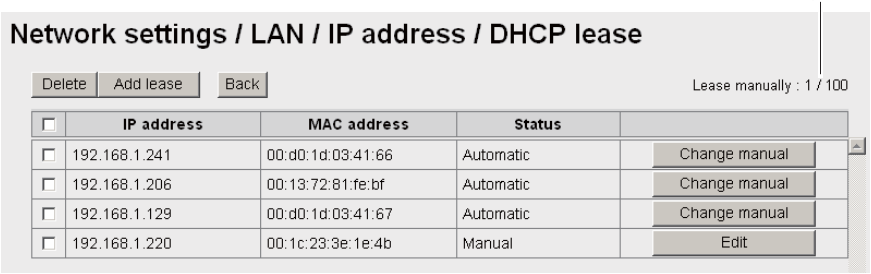
If these settings are changed, it might be necessary to change the settings of the equipment connected to CmmUnt.
(IP Handset, Incoming indicator, etc...)

Please be careful !

Item	Description
Own IP address	
IP address	Enter the LAN IP Address (IPv4 Address). Factory setting is [192.168.1.1.].
Subnet mask	Select the LAN Subnet mask.
DHCP Server	
Lease information button	Go to the DCHP lease information screen.
DHCP	Use: Use DHCP Server in the communication unit. Unuse: Do not use DHCP Server.
From	Enter assigned commencement IP address (IPv4 address). Factory setting is [192.168.1.10].
To	Enter assigned last IP address (IPv4 address). Factory setting is [192.168.1.254].
Apply button	Click to apply settings. The screen shows "The CmmUnt will restart automatically after this settings. Continue?" → [OK] button → “Completed. Please wait a moment for restarting.” displays → press the [OK] button to close message → Equipment restarts.
Cancel button	Restore previous settings.

DHCP lease information screen

Click [Settings] in the menu bar, [Network settings], [LAN] and [Routing] in the sub-menu. The following screen appears.


No. of entries made / No. of entries possible

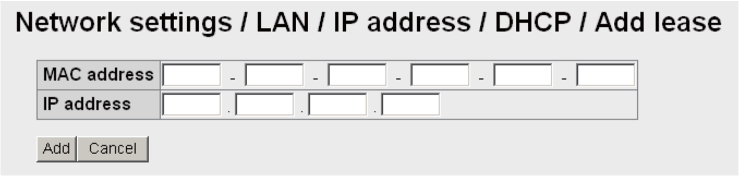
Network settings / LAN / IP address / DHCP lease

Lease manually : 1 / 100

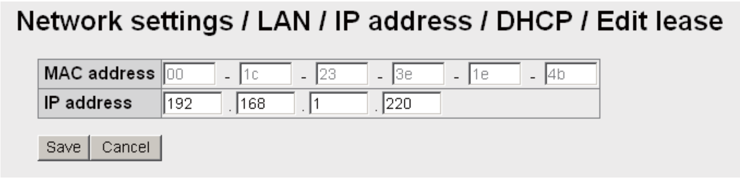
☐	IP address	MAC address	Status	
☐	192.168.1.241	00:d0:1d:03:41:66	Automatic	Change manual
☐	192.168.1.206	00:13:72:81:fe:bf	Automatic	Change manual
☐	192.168.1.129	00:d0:1d:03:41:67	Automatic	Change manual
☐	192.168.1.220	00:1c:23:3e:1e:4b	Manual	Edit

Item	Description
Delete button	Delete the item which has a checkmark.
Add lease button	Enter new lease information. The screen for entry of new lease information appears.
Back button	Return to IP address entry screen.
IP address	Assigned IP address is shown.
Mac address	Assigned Mac address of the network device for the assigned IP address is shown.
Status	Automatic assignment, manual assignment
Change manual button,	Change from automatically assigned to manually assigned (the maximum no. for manual assignment is 100).
Edit button	Change lease information. (Appears in manual assignment only.) The screen for changing lease information appears.

Entry screen/Edit screen


Network settings / LAN / IP address / DHCP / Add lease

Entry screen


Network settings / LAN / IP address / DHCP / Edit lease

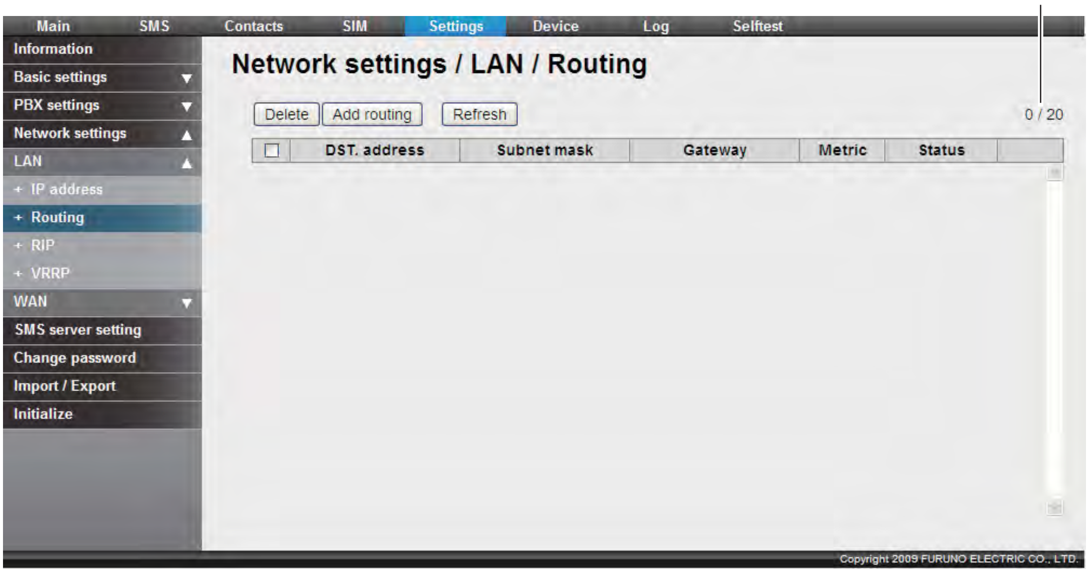
MAC address 00 - 1c - 23 - 3e - 1e - 4b
IP address 192 . 168 . 1 . 220

Edit screen

Item	Description
MAC address	Enter MAC address of device to be registered. Available characters: 2 characters x 6 bytes.
IP address	Enter or change the manually assigned IP address (IPv4 address).
Add button	Register information entered. Return to DHCP information screen.
Save button	Save information entered. Return to DHCP information screen.
Cancel button	Return to DHCP information screen.

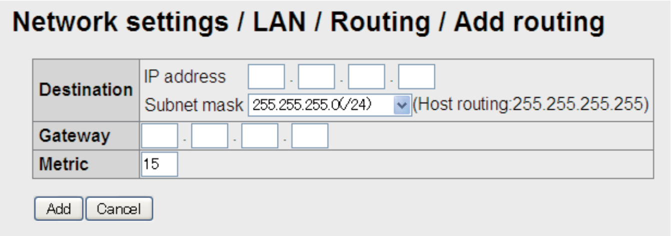
Routing information settings

No. of entries made / No. of entries possible


Main
SMS
Contacts
SIM
Settings
Device
Log
Selftest
Information
Basic settings
PBX settings
Network settings
LAN
IP address
Routing
RIP
VRRP
WAN
SMS server setting
Change password
Import / Export
Initialize
Network settings / LAN / Routing
Delete
Add routing
Refresh
0 / 20
DST. address
Subnet mask
Gateway
Metric
Status
Copyright 2009 FURUNO ELECTRIC CO., LTD.

Item	Description
Delete button	Delete item having a checkmark [✓]. Items which the [Status] is [Dynamic] cannot be deleted.
Add routing button	Enter new routing information. (A maximum of 20 can be registered.) The screen for entry of routing information appears.
Refresh button	Update information.
DST. address	Display destination address.
Subnet mask	Display subnet mask.
Gateway	Display gateway.
Metric	Display metric information.
Status	Display status information. Static, Dynamic.
Edit button	Shown when [Status] is [Static]. Change routing information. The information screen for change routing appears..

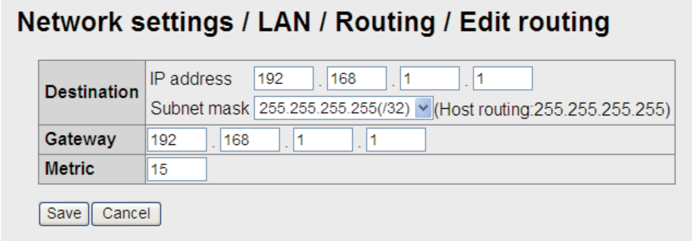
Entry screen/Edit screen



Network settings / LAN / Routing / Add routing

Destination
IP address . . .
Subnet mask 255.255.255.0(/24) (Host routing:255.255.255.255)
Gateway . . .
Metric 15

Entry screen



Network settings / LAN / Routing / Edit routing

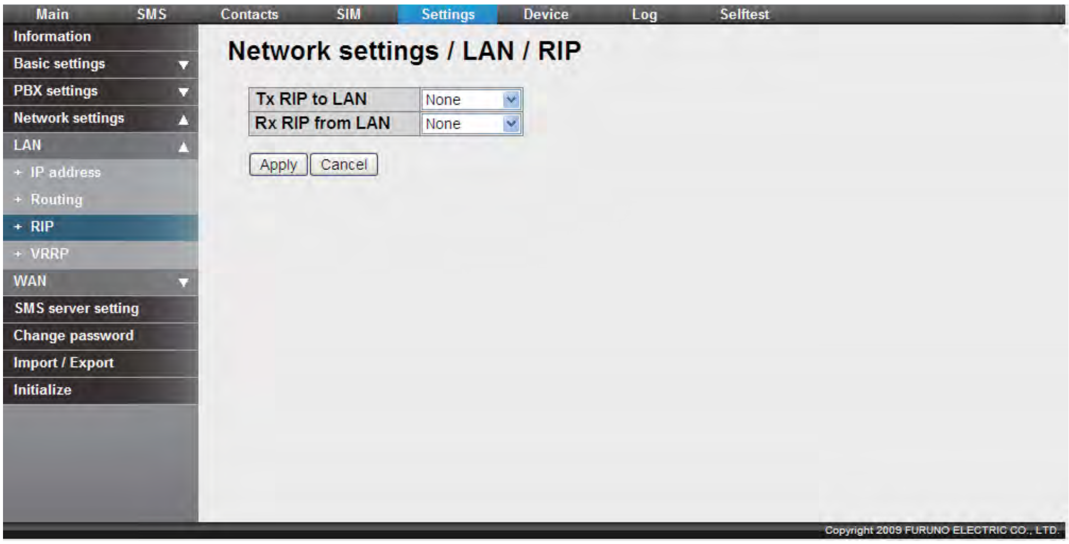
Destination
IP address 192 . 168 . 1 . 1
Subnet mask 255.255.255.255(/32) (Host routing:255.255.255.255)
Gateway 192 . 168 . 1 . 1
Metric 15

Edit screen

Item	Description
Destination	Destination address. • IP address: Entry and change of destination IP address (IPv4). • Subnet mask: Select LAN-side subnet mask. 255.255.255.255 is for host routing.
Gateway	Enter and change default gateway (IPv4).
Metric	Enter and change metric (numeric input: 01 - 15) Input available: 2 alphanumeric characters.
Add button	Register information entered. Return to routing information setting screen.
Save button	Save information entered. Return to routing information setting screen.
Cancel button	Return to routing information setting screen.

RIP settings

Click [Settings], [Network settings], [LAN] and [RIP] in the menu bar. The following screen appears.


Main
SMS
Contacts
SIM
Settings
Device
Log
Selftest
Information
Basic settings
PBX settings
Network settings
LAN
+ IP address
+ Routing
+ RIP
+ VRRP
WAN
SMS server setting
Change password
Import / Export
Initialize
Apply
Cancel
Copyright 2009 FURUNO ELECTRIC CO., LTD.

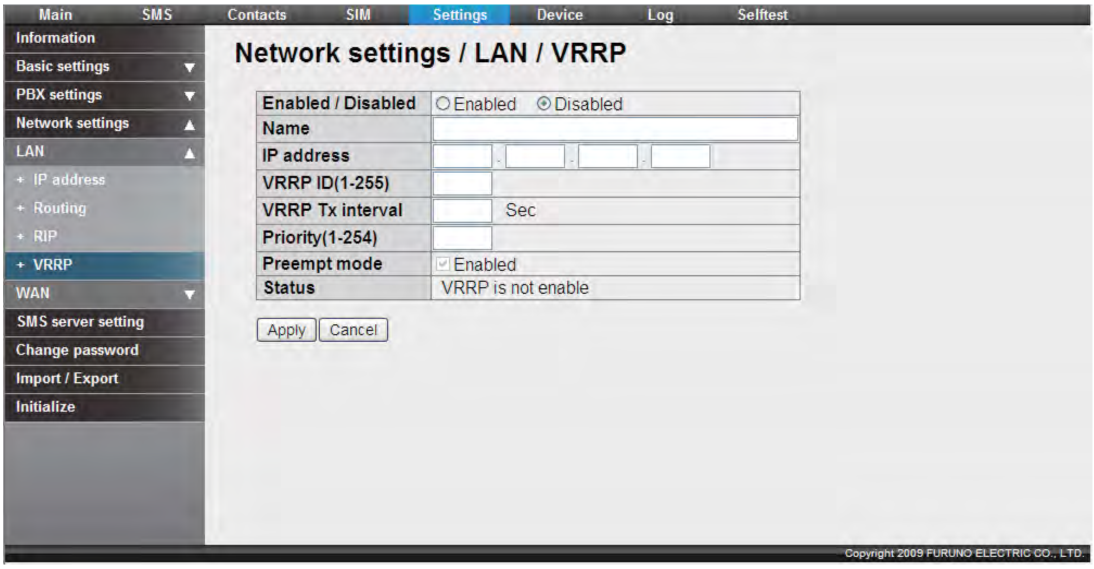
Network settings / LAN / RIP

Tx RIP to LAN	None
Rx RIP from LAN	None

Item	Description
Tx RIP to LAN	Select RIP transmission to LAN. (None, RIP1&RIP2, RIP1, RIP2.) Default setting: None
Rx RIP to LAN	Select RIP reception from LAN. (None, RIP1&RIP2, RIP1, RIP2.) Default setting: None
Apply button	Click to apply settings.
Cancel button	Restore previous settings.

VIrtual router settings

Click [Settings], [Network settings], [LAN] and [VRRP] in the menu bar. The following screen appears.


Main
SMS
Contacts
SIM
Settings
Device
Log
Selftest
Information
Basic settings
PBX settings
Network settings
LAN
+ IP address
+ Routing
+ RIP
+ VRRP
WAN
SMS server setting
Change password
Import / Export
Initialize
Apply
Cancel
Copyright 2009 FURUNO ELECTRIC CO., LTD.

Network settings / LAN / VRRP

Enabled / Disabled	○ Enabled ● Disabled
Name	
IP address	. . .
VRRP ID(1-255)	
VRRP Tx interval	Sec
Priority(1-254)	
Preempt mode	☑ Enabled
Status	VRRP is not enable

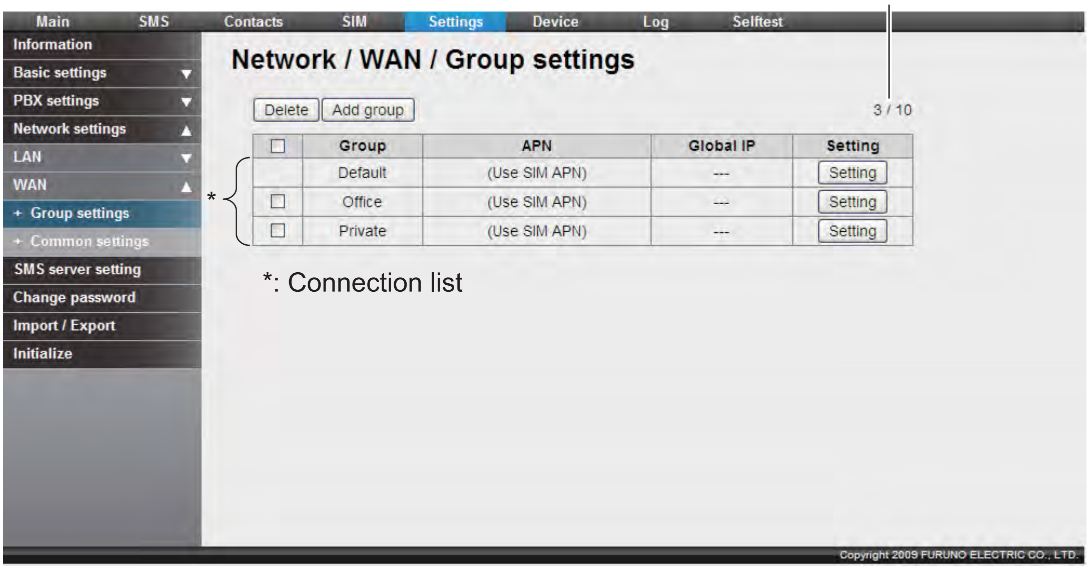
Item	Description
Enabled/Disabled	Enabled: VRRP valid, Disabled: VRRP invalid (default). The settings mentioned below cannot be changed when [Disabled] is active.
Name	Enter name of virtual router. (alphanumeric input, a maximum of 50 characters)
IP address	Enter the IP address (IPv4) of the virtual router.
VRRP ID (1-255)	Enter VRRP ID (numeric input, 1 - 255).
VRRP Tx interval	Enter VRRP transmitting interval (numeric input, 1 - 99).
Priority (1 - 254)	Enter priority (numeric input, 1 - 254).
Preempt mode	Enable or disable the preempt mode. [✓] indicates enabled. Default: enabled
Status	Show status (Master, Backup, Error enabled/disabled).
Apply button	Click to apply settings.
Cancel	Restore previous settings.

6.1.5 WAN settings

The network equipment (PC, etc.) connected to the FELCOM can be divided into multiple groups to get independent data connection for each group. For example, you can have a group for office use and a group for private use. In this way crew members can pay for their own personal communication charges, making it unnecessary to limit communications. The Network Administrator is responsible for the entry of WAN-related settings.

WAN group setting

Click [Settings] in the menu bar, then [Network settings] and [WAN] in the sub-menu to the WAN group setting screen. The connection list has one group (group name: Default) registered to the list.


No. of registered groups/Total no. of groups available
Main
SMS
Contacts
SIM
Settings
Device
Log
Selftest
Information
Basic settings
PBX settings
Network settings
LAN
WAN
+ Group settings
+ Common settings
SMS server setting
Change password
Import / Export
Initialize
Delete
Add group
3 / 10
*
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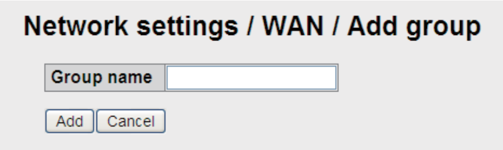
Network / WAN / Group settings

☐	Group	APN	Global IP	Setting
	Default	(Use SIM APN)	---	Setting
☐	Office	(Use SIM APN)	---	Setting
☐	Private	(Use SIM APN)	---	Setting

*: Connection list

Item	Description
Delete button	Delete the item having a checkmark [✓]. • [Derfault] at the top of the connection list, cannot be deleted. • A group currently doing PS* cannot be deleted. *PS: Packet Switching
Add group button	Create a new WAN group. Up to ten groups can be created. The creation screen appears.
Group	Display group names.
APN	Display connection destinations. (If connection destination is registered in the SIM card: “USE SIM APN” appears.
Global IP	• Data connection in use: Global IP address is shown. • Not connected: “---” appears.
Setting button	Show the group setting screeen. The group setting screen has eight types of setting screens. (Group can be registered to each screen.)

Entry screen



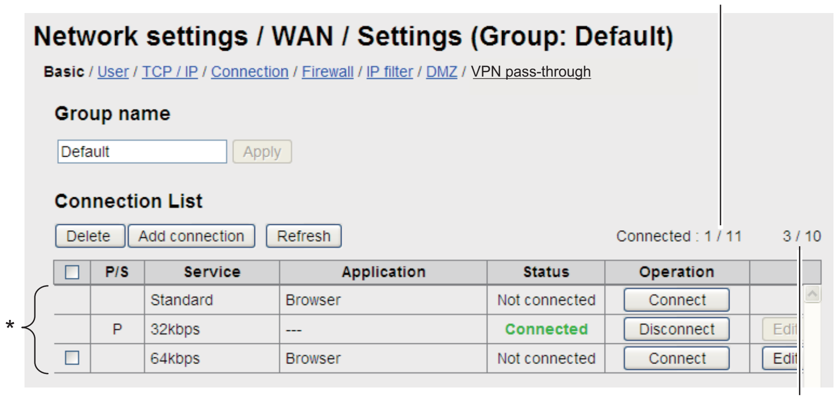
Network settings / WAN / Add group

Item	Description
Group name	Enter group name.
Add button	Register entered information. Control returns to the WAN group setting screen.
Cancel button	Return to the WAN group setting screen.

Group setting screen (basic)

Click Basic on the Group setting screen to show the basic setting screen. This screen is where you make a connection list.

No. of connections/No. of connections available (incl. other groups)



Network settings / WAN / Settings (Group: Default)

Basic / User / TCP / IP / Connection / Firewall / IP filter / DMZ / VPN pass-through

Group name

Default [Apply]

Connection List

[Delete] [Add connection] [Refresh] Connected : 1 / 11 3 / 10

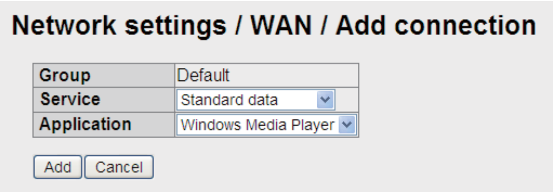
☐	P/S	Service	Application	Status	Operation	
		Standard	Browser	Not connected	Connect	
	P	32kbps	---	Connected	Disconnect	Edi
☐		64kbps	Browser	Not connected	Connect	Edi

*: Connection list

No. of registrations/No of registrations available

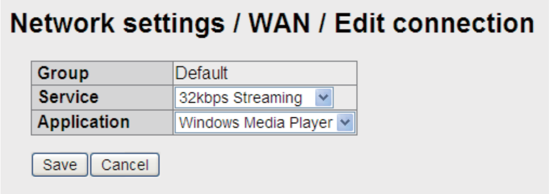
Item	Description
Group name	
Group name	Display, change Group name.
Apply button	Confirm changes to group. (Not available during PS.)
Connection list	
Delete button	Delete the item having a checkmark [✓]. • Cannot delete item (Standard/Browser) at top of connection list. • During PS, any item having Status as Connected cannot be deleted. (No checkmark)
Add connection button	Create connection list (10 connections can be registered.) The create screen appears.
Refresh button	Refresh the screen.
P/S	• P: First data connection for each group is shown. • S: Second and subsequent data connections for each group are shown.
Service	Show service available.
Application	Show application available. (Effective for second or after PS.)
Status	Display connection status. Connected, or Not connected is shown.
Operation	• Disconnect button: Disconnect connection. • Connect button: Establish connection. **Note:** Disconnecting a service that is prefixed with a P mark disconnects all services currently connected.
Edit button	Edit the connection list. (Not available during PS.) Control goes to the Edit screen.

Entry screen/Edit screen


Network settings / WAN / Add connection

Group	Default
Service	Standard data
Application	Windows Media Player

Creation screen


Network settings / WAN / Edit connection

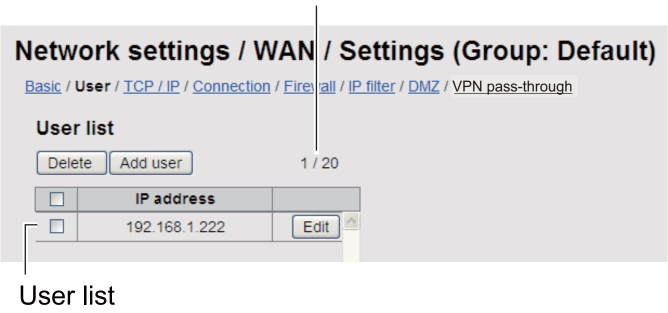
Group	Default
Service	32kbps Streaming
Application	Windows Media Player

Edit screen

Item	Description
Group	Display group name.
Service	Select service to use. (Standard data, 8kbps Streaming, 16kbps Streaming, 32kbps Streaming, 64kbps Streaming, 128kbps Streaming, 256kbps Streaming*) The topmost item on the connection list (Standard) cannot be changed. * FELCOM 500 only
Application	Effective for second or after PS. Select application to use (Windows Media Player, Quick Time, Real Player, FTP, Browser). **Note:** The topmost item (Browser) on the connection list cannot be changed.
Add button	Register entered information. Control returns to the group setting screen.
Save button	Save entered information. Control returns to the group setting screen.
Cancel button	Return to the group setting screen.

Group setting screen (User)

Click user on the group setting screen to show the User setting screen. Enter IP address of handset and PC to enable data connection. If no IP address is entered, “D: No permission” appears on the standby display of the handset and “Data connection No permission” appears on the main display of the web software.


No. of entries/No. of entries available
Basic / User / TCP / IP / Connection / Firewall / IP filter / DMZ / VPN pass-through
User list
Delete
Add user
Edit
User list

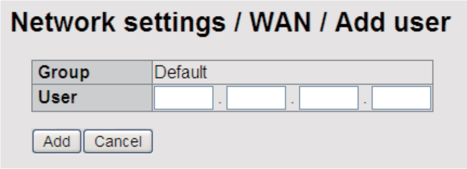
Network settings / WAN / Settings (Group: Default)

1 / 20

☐	IP address	
☐	192.168.1.222	Edit

Item	Description
Delete button	Delete checked [✓] item. During PS, item is deleted after completion of PS.
Add user button	Add user to group (maximum 20). Entry screen appears.
IP address	Show IP address of registered user.
Edit button	Change user IP address. The edit screen appears.

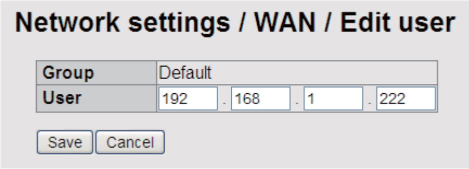
Entry screen/Edit screen



Network settings / WAN / Add user

Group	Default
User	. . .

Entry screen


Save
Cancel

Network settings / WAN / Edit user

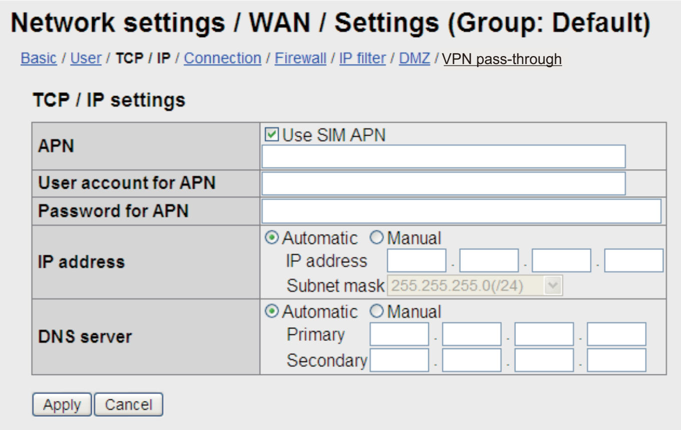
Group	Default
User	192 . 168 . 1 . 222

Edit screen

Item	Description
Group	Display group name.
User	Enter, change IP address (127.0.0.1, 255.255.255.255; must be different from IP address of communication unit). **Note:** if the IP addresses are the same, only one group can be registered. “192.161.1.” and “192.168.1.10” can be registered. * is a wildcard: show network. If you registered two groups this way, the group having the narrowest range (192.168.1.10) has priority.
Add button	Register the information set. The group setting screen appears.
Save button	Save the information. The group setting screen appears. Duriing, change is refelected the connection is reestablished.
Cancel button	Return to the group setting screen

Group setting screen (TCP/IP)

Click TCP/IP on the group setting screen to to show the TCP/IP setting screen. Set the connection destination for each provider service.



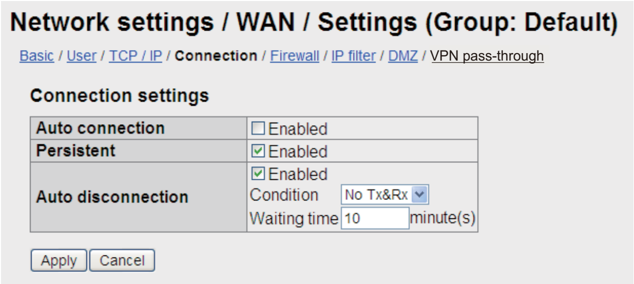
Network settings / WAN / Settings (Group: Default)
Basic / User / TCP / IP / Connection / Firewall / IP filter / DMZ / VPN pass-through
TCP / IP settings
Apply
Cancel

APN	☑ Use SIM APN
User account for APN	
Password for APN	
IP address	● Automatic ○ Manual IP address . . . Subnet mask 255.255.255.0(/24)
DNS server	● Automatic ○ Manual Primary . . . Secondary . . .

Item	Description
APN	• Usse connection destination registered in the SIM card (checkmarked [✓] items). • Use ACS II characters (other than “, ’) for the names of connection destinations (maximum 63 characters).
User account for APN	Enter username specified by provider (maximum 29 characters). Ok to leave blank.
Password for APN	Enter password specified by provider (maximum 29 characters). Ok to leave blank.
IP address	• Choose the method for obtaining IP address (Automatic, Manual). • If Manual is selected, enter the IP Address (IPv4 address). • If Manual is selected, choose the network mask.
DNS server	• Choose the method for obtaining the DNS server address (Automatic, Manual). • If Manual is selected, enter the address of the priority DNS server (IPv4 address). • If Manual is selected, enter the address of the Secondary DNS Server (IPv4 address).
Apply button	Click to apply settings and return to the WAN setting screen.
Cancel button	Click to return to the WAN setting screen.

Group setting screen (Connection)

Click Connection on the Group setting screen to shown the Connection settings screen. Enter connection settings as applicable.



Network settings / WAN / Settings (Group: Default)

Basic / User / TCP / IP / **Connection** / Firewall / IP filter / DMZ / VPN pass-through

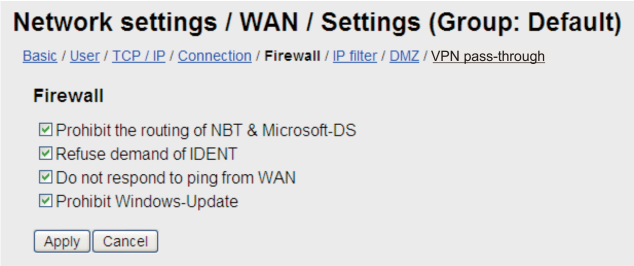
Connection settings

Auto connection	☐ Enabled
Persistent	☑ Enabled
Auto disconnection	☑ Enabled Condition No Tx&Rx Waiting time 10 minute(s)

Item	Description
Auto connection	Place a [✓] to connect automatically when power is turned on. Applicable to topmost item on the connection list (Standard/Browser).
Persistent	Place a [✓] to automatically reconnect.
Auto disconnection	• Place a [✓] to automatically disconnect. • If applied, choose disconnect condition (Any Time, No Tx&Rx, No Tx, No Rx) • If applied, enter disconnect time (001 - 999).
Apply button	Click to apply settings. If group is doing PS, changes are applied after completion of PS.
Cancel button	Click to restore previous settings.

Group setting screen (Firewall)

Click Firewall on the Group setting. Use this screen to block unwanted communications. Set the screen according to application and system.



Network settings / WAN / Settings (Group: Default)

Basic / User / TCP / IP / Connection / **Firewall** / IP filter / DMZ / VPN pass-through

Firewall

☑ Prohibit the routing of NBT & Microsoft-DS
☑ Refuse demand of IDENT
☑ Do not respond to ping from WAN
☑ Prohibit Windows-Update

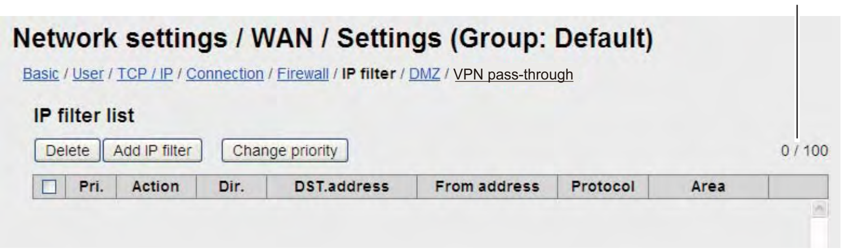
Item	Description
Prohibit the routing of NBT & MIcrosoft-DS	Check to prohibit NBT and Microsoft-DS. The default setting is “checked”.
Refuse demand of IDENT	Disregard ping from WAN side. Place a [✓] to activate. The default seting is “checked”.
Do not respond to ping from WAN	Check [✓] to prohibit response to ping from WAN. Initial setting is “checked”.
Prohibit Windows-Update	Prohibit Windows-Update. Place a [✓] to activate. The default setting is “checked”.
Apply button	Click to apply previous settings.

Item	Description
Cancel button	Click to return to uncheck checked items.

Group setting screen (IP filter)

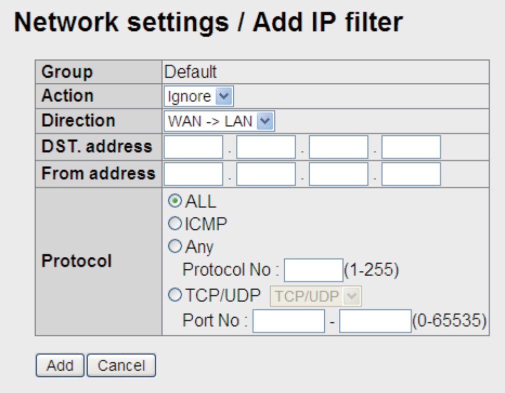
Click IP filter on the Group setting screen to show the IP filter setting screen. This screen lets you prevent unwanted communications. Set the screen according to application and system.

No. of registrations/No. of registrations available


Network settings / WAN / Settings (Group: Default)
Basic / User / TCP / IP / Connection / Firewall / IP filter / DMZ / VPN pass-through
IP filter list
Delete
Add IP filter
Change priority
0 / 100
☐
Pri.
Action
Dir.
DST.address
From address
Protocol
Area

Item	Description
Delete button	Delete items with checkmarks [✓].
Add IP filter button	Register new IP filter. (Max. 100.) The IP filter entry screen appears.
Change priority button	Change priority of IP filters. The priority edit screen appears.
Pri.	Show priority. (The smaller the number the higher the priority.)
Action	Show actions.
Dir	Show direction.
DST. address	Show the recipient address (if not set, “anywhere” is shown).
From address	Show the sender address (if not set, “anywhere” is shown).
Protocol	Display the protocol.
Area	• If [Protocol] is [Any], displays the protocol number. • If [Protocol] is [TCP/UDP], [TCP], [UDP]: displays the port range.
Edit button	Edit the IP filter. The edit screen appears.

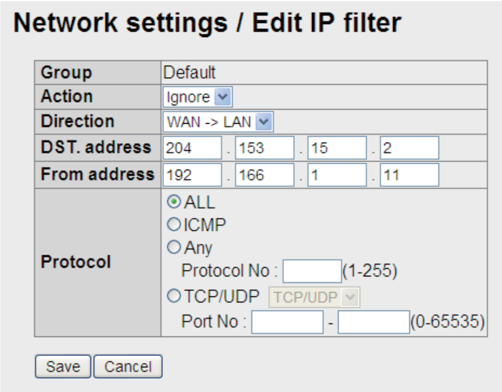
Entry screen/Edit screen



Network settings / Add IP filter

Group	Default
Action	Ignore
Direction	WAN -> LAN
DST. address	. . .
From address	. . .
Protocol	● ALL ○ ICMP ○ Any Protocol No : (1-255) ○ TCP/UDP TCP/UDP Port No : - (0-65535)

Entry screen



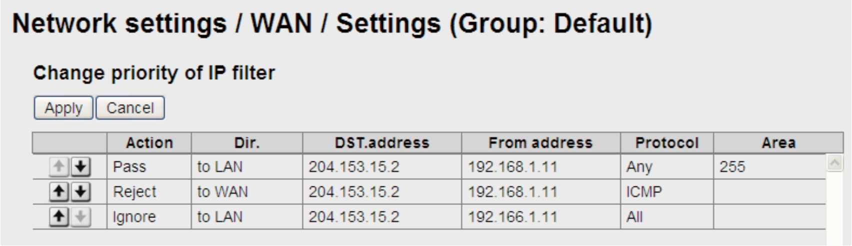
Network settings / Edit IP filter

Group	Default
Action	Ignore
Direction	WAN -> LAN
DST. address	204 . 153 . 15 . 2
From address	192 . 166 . 1 . 11
Protocol	● ALL ○ ICMP ○ Any Protocol No : (1-255) ○ TCP/UDP TCP/UDP Port No : - (0-65535)

Edit screen

Item	Description
Group	Display group name
Action	Select action (Ignore, Reject, Pass).
Direction	Show direction (WAN→LAN, LAN→WAN).
DST. address	Enter, edit destination address (IPv4 address).
From address	Enter, edit source address (IPv4 address).
Protocol	Select protocol (ALL, ICMP, Any, TCP/UDP). • If [Protocol] is [Any], displays the protocol number (1-255). • If [Protocol] is [TCP/UDP] only, select TCP/UDP, TCP, UPD from list box. Enter port no. (range: 0-65535).
Add button	Register entered information. The IP filter setting screen appears.
Save button	Save entered information. The IP filter setting screen appears.
Cancel button	Return to IP filter setting screen.

Change priority of IP filter screen



Network settings / WAN / Settings (Group: Default)

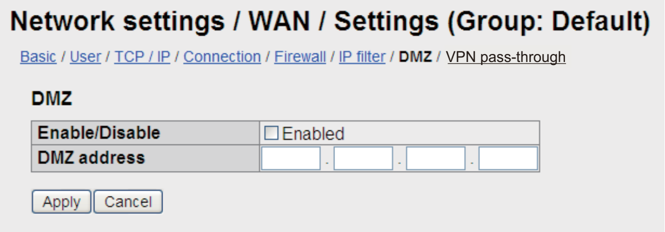
Change priority of IP filter

	Action	Dir.	DST.address	From address	Protocol	Area
⇧ ⬇	Pass	to LAN	204.153.15.2	192.168.1.11	Any	255
⬆ ⬇	Reject	to WAN	204.153.15.2	192.168.1.11	ICMP	
⬆ ⇩	Ignore	to LAN	204.153.15.2	192.166.1.11	All	

Item	Description
⬆ ⇧	Raise priority. (Right button: inoperative)
⬇ ⇩	Lower priority. (Right button: inoperative)
Apply button	Save entered information. Return to the IP filter setting screen.
Cancel button	Restore previous IP filter settings.

Group setting screen (DMZ)

Click DMZ on the group setting screen to show the DMZ setting screen. Set the screen according to your system.



Network settings / WAN / Settings (Group: Default)

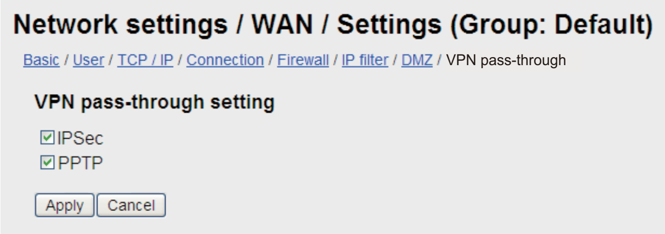
Basic / User / TCP / IP / Connection / Firewall / IP filter / DMZ / VPN pass-through

DMZ

Enable/Disable	☐ Enabled
DMZ address	. . .

Item	Description
Enable DMZ	Check [✓] to use DMZ. Not checked in initial setting.
DMZ address	Enter DMZ address (IPv4 address).
Apply button	Apply settings.
Cancel button	Restore previous settings

VPN pass-through screen



Network settings / WAN / Settings (Group: Default)

Basic / User / TCP / IP / Connection / Firewall / IP filter / DMZ / VPN pass-through

VPN pass-through setting

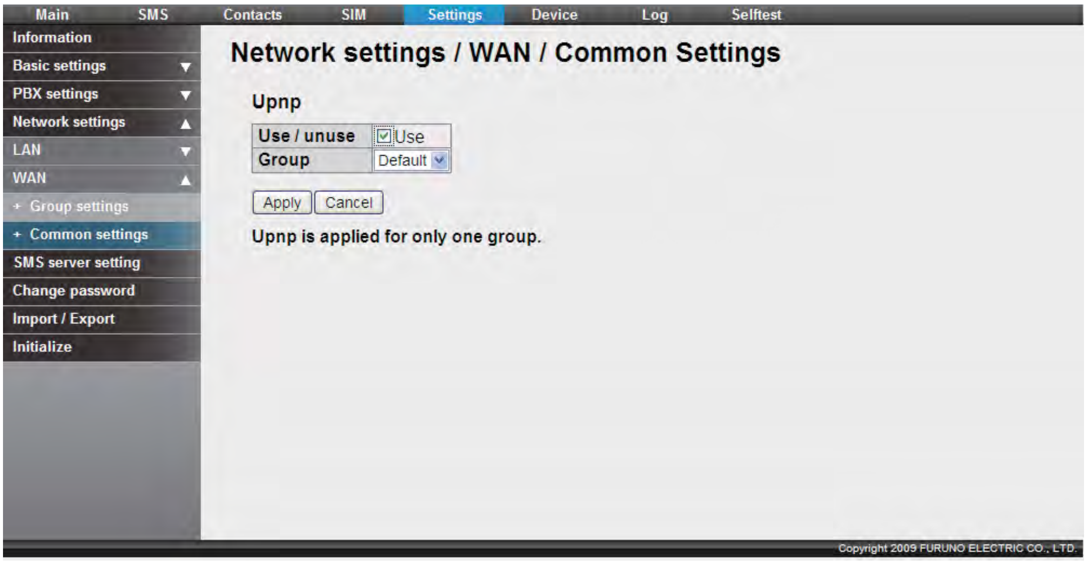
☑IPSec
☑PPTP

Apply
Cancel

Item	Description
IPSec	Place a [✓] by IPSec pass-through to activate.
PPTP	Place a [✓] by PPTP pass-through to activate.
Apply button	Click to apply changes.
Cancel button	Click to ignore changes.

Common settings screen

On the menu bar, click Settings, Network settings, WAN, Common settings to show the Common settings setting screen.



Main
SMS
Contacts
SIM
Settings
Device
Log
Selftest
Information
Basic settings
PBX settings
Network settings
LAN
WAN
+ Group settings
+ Common settings
SMS server setting
Change password
Import / Export
Initialize

Network settings / WAN / Common Settings

Upnp

Use / unuse	☑Use
Group	Default

Apply
Cancel

Upnp is applied for only one group.

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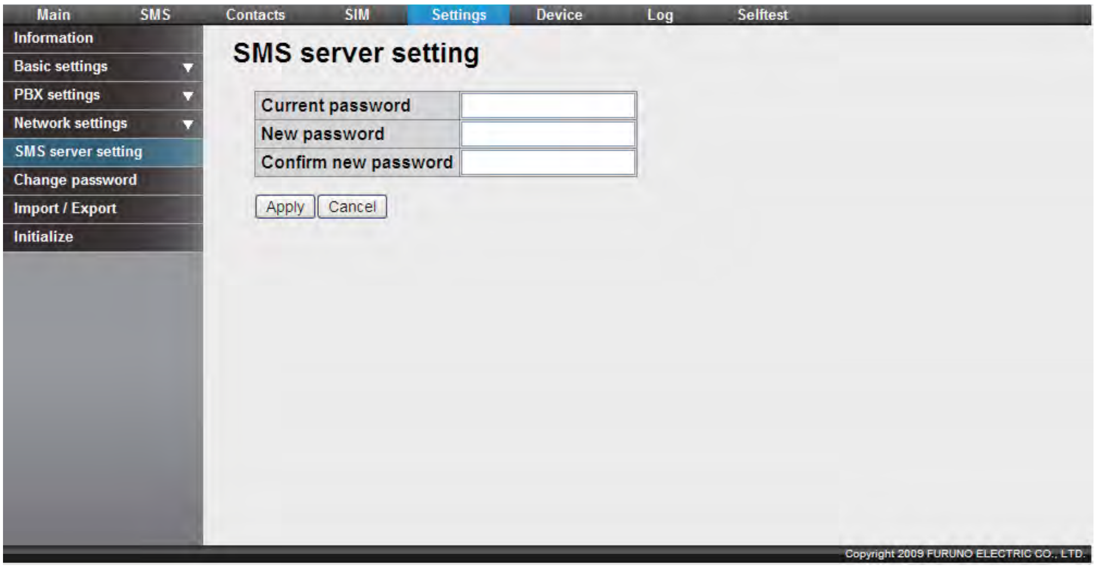
Item	Description
Use / unuse	Check [✓] to use Upup. Not active in initial setting.
Group	Select group to use.
Apply button	Apply settings.
Cancel button	Restore previous settings

6.1.6 How to change the SMS password

Do the following procedure to change the SMS password. Make sure to write down and not forget the password. If the password is lost, contact the dealer or retail supplier. If this occurs, FELCOM 250/500 must be reset to factory settings (refer to section 7.7.2).

1. Click [Settings] in the menu bar.
2. Click [SMS server setting]. The following SMS server setting screen appears.


Main
SMS
Contacts
SIM
Settings
Device
Log
Selftest
Information
Basic settings
PBX settings
Network settings
SMS server setting
Change password
Import / Export
Initialize
SMS server setting
Current password
New password
Confirm new password
Apply
Cancel
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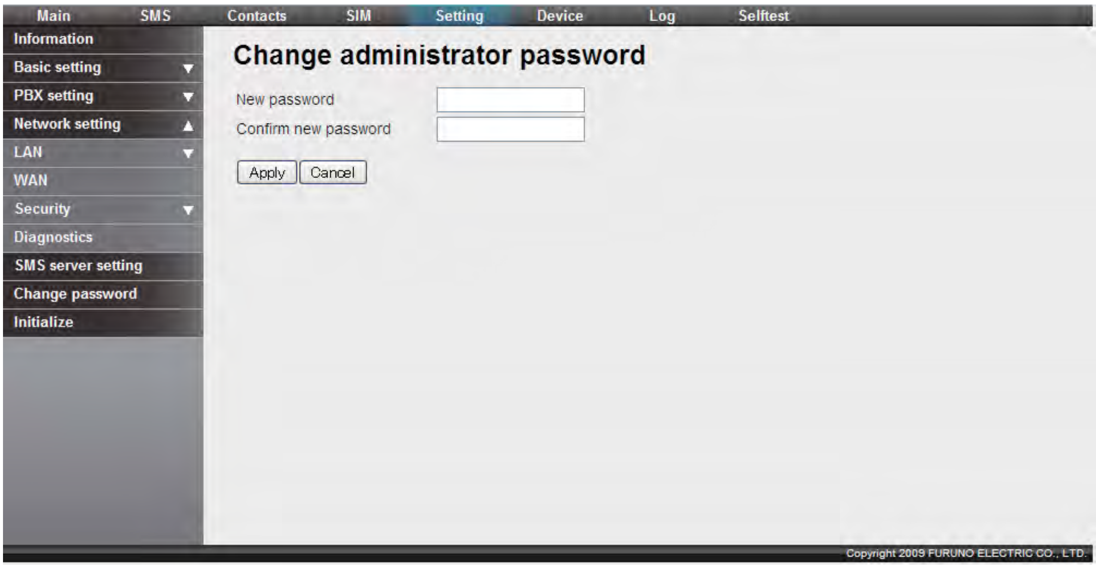
3. Enter the current SMS password in the [Current password] field. Characters are displayed as black circles.
4. Enter the new password in the [New password] field (Maximum 8 characters).
5. Enter the new password again in the [Confirm new password] field.
6. Click the [Apply] button. The message "Setting completed" appears.
   Note: The following error messages can occur:
   - Current Password isn’t correct: The current password was entered incorrectly.
   - New Password isn’t corresponding: The [New password] and [Confirm new password] fields are not the same.
7. Click the [OK] button.

6.1.7 How to change the administrator password

Do the following to change the Administrator password (needed when login as Administrator.). Make sure to write down and not forget the password. If the password is lost, contact the dealer or retail supplier. If this occurs, FELCOM 250/500 must be reset to factory settings (refer to section 7.7.2).

1. Click [Settings] in the menu bar.
2. Click [Change password]. The following Administrator password setting screen appears.


Main
SMS
Contacts
SIM
Setting
Device
Log
Selftest
Information
Basic setting
PBX setting
Network setting
LAN
WAN
Security
Diagnostics
SMS server setting
Change password
Initialize
Change administrator password
New password
Confirm new password
Apply
Cancel
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3. Enter the new password in the [New password] field (4 - 8 characters). The characters are displayed as black circles.
4. Enter the new password again in the [Confirm new password] field.
5. Click the [Apply] button. The message "Setting completed" appears.

   Note: The following error messages can occur:

   - New Password isn’t corresponding: The [New password] and [Confirm new password] fields are not the same.

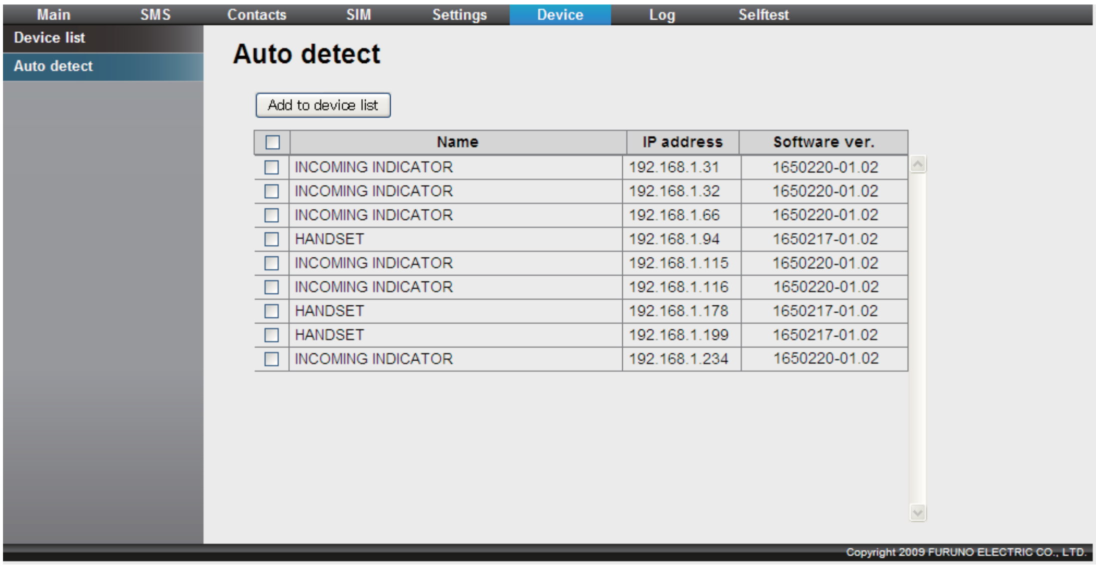
6. Click the [OK] button.

6.2 Device List

All devices connected to the same network can be displayed. All devices auto detected on the handset also be changed with the Web software.

6.2.1 How to detect devices automatically

1. Click [Device] in the menu bar.
2. Click [Auto detect]. A list is displayed of all connected devices.


Main
SMS
Contacts
SIM
Settings
Device
Log
Selftest
Device list
Auto detect
Auto detect
Add to device list
Copyright 2009 FURUNO ELECTRIC CO., LTD.

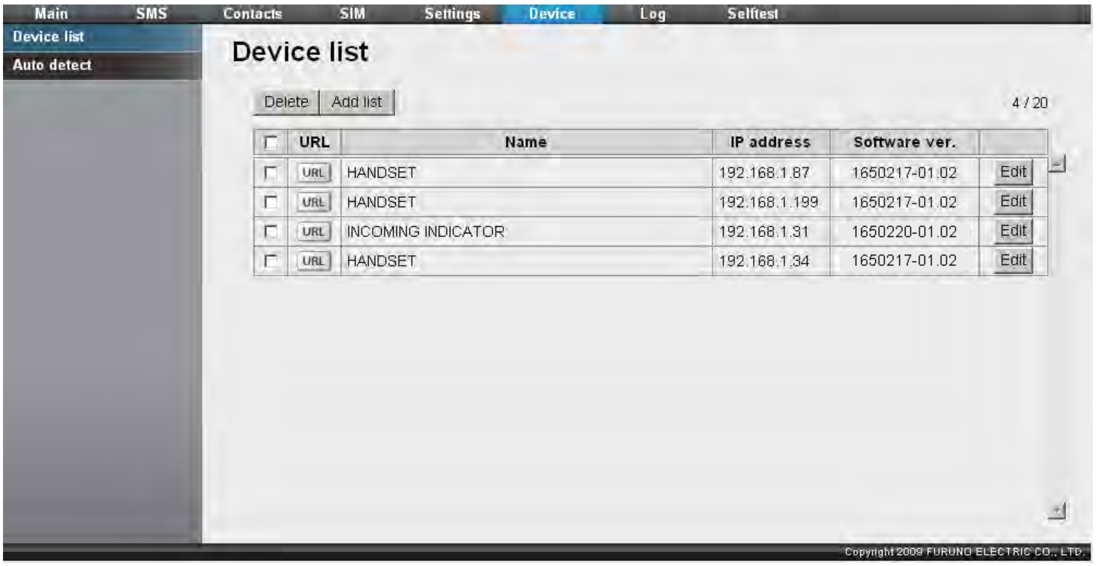
☐	Name	IP address	Software ver.
☐	INCOMING INDICATOR	192.168.1.31	1650220-01.02
☐	INCOMING INDICATOR	192.168.1.32	1650220-01.02
☐	INCOMING INDICATOR	192.168.1.66	1650220-01.02
☐	HANDSET	192.168.1.94	1650217-01.02
☐	INCOMING INDICATOR	192.168.1.115	1650220-01.02
☐	INCOMING INDICATOR	192.168.1.116	1650220-01.02
☐	HANDSET	192.168.1.178	1650217-01.02
☐	HANDSET	192.168.1.199	1650217-01.02
☐	INCOMING INDICATOR	192.168.1.234	1650220-01.02

3. Place a [✓] in the checkbox next to the device to add to the Device list.
4. Click [Add to device list]. The message "Completed" appears.
   Note: When you try to add a new device, if the number of items on the Device list is already at 20 items, the message "It exceeds the maximum number of the device list." appears and the device is not added.
5. Press the [OK] button to close the message.
   The device chosen in step 3 is added to the device list.

6.2.2 How to change the link setting in the Device list

Handsets, Incoming Indicators, etc., are registered to the Device list, and can be changed with the Web software. Also, equipment is connected to a web server can be manually registered with the Web software. A maximum of 20 items can be registered.

1. Click [Device] in the menu bar.
2. Click [Device list] to show the list of registered items.


Main
SMS
Contacts
SIM
Settings
Device
Log
Selftest
Device list
Auto detect
Delete
Add list

Device list

4 / 20

☐	URL	Name	IP address	Software ver.	
☐	URL	HANDSET	192.168.1.87	1650217-01.02	Edit
☐	URL	HANDSET	192.168.1.199	1650217-01.02	Edit
☐	URL	INCOMING INDICATOR	192.168.1.31	1650220-01.02	Edit
☐	URL	HANDSET	192.168.1.34	1650217-01.02	Edit

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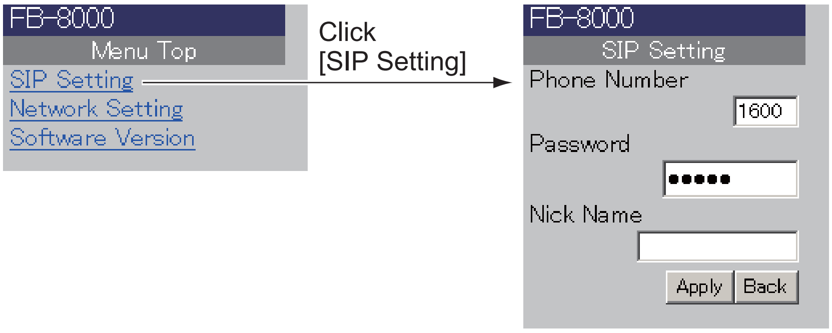
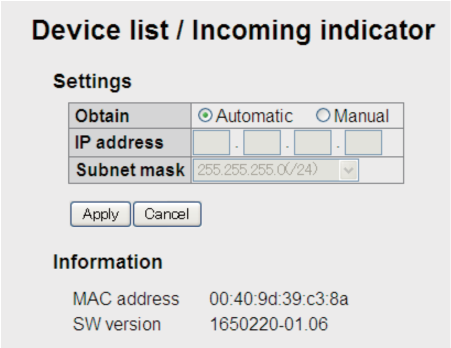
3. To select the item to change the link information, click the [URL] button on the left side.


FB-8000
Menu Top
SIP Setting
Network Setting
Software Version
Click
[SIP Setting]
FB-8000
SIP Setting
Apply
Back

Phone Number
1600
Password
●●●●●
Nick Name

If [Handset] is selected


Apply
Cancel

Device list / Incoming indicator

Settings

Obtain	● Automatic ○ Manual
IP address	. . .
Subnet mask	255.255.255.0(/24)

Information

MAC address 00:40:9d:39:c3:8a
SW version 1650220-01.06

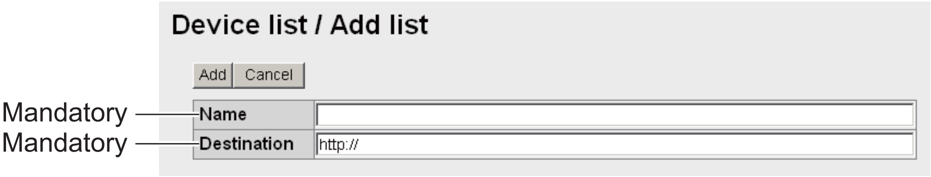
If [INCOMING INDICATOR] is selected

4. Edit settings as desired.
5. Click the [Return] button on the top of the web browser to return to the Device list.

How to manually register an item on the Device list

You can manually register equipment on the web server to the device list.

1. Open the Device list.
2. Click the [Add list] button.



Device list / Add list

3. Enter the name in the [Name] field (max. 50 characters).
4. Enter the destination URL in the [Destination] field (max. 192 characters).
5. Click the [Add] button.
6. Click the [Ok] button to erase the message.

How to edit an item on the Device list

You can edit the name or destination URL of a device. However, the destination of an incoming indicator cannot be edited.

1. Open the Device list.
2. Click the [Edit] button to the right of the device to select the item to edit.
3. Edit the name or destination URL of the device.
4. Click the [Save] button.
5. Click the [OK] button to erase the message.

How to delete an item from the Device list

You can delete one or all of the items from the Device list.

1. Open the Device list.
2. Place a [✓] in the box to the left of the item to delete (you can select multiple items). To Delete all items place a [✓] in the box on the left side of [URL] at the top of the list. All items will be checked.
3. Click the [Delete] button.
4. Click the [OK] button.
5. Click the [OK] button again to close the message.

6.3 Log

View the Registration log, Voice call log, Data connection log, or Error log.

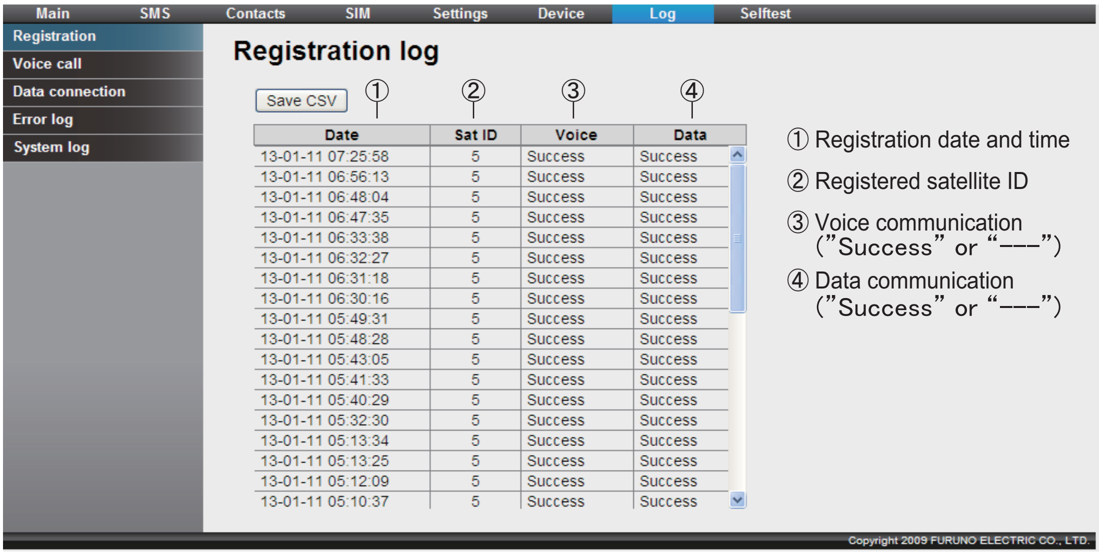
Log	Maximum save items	Maximum viewable items
Registration	1000 items per each	Last 100 items per each
Voice call		
Data connection		
Error		

Note: To view a log with more than 100 items, save to a CSV file. A CSV file contains the maximum of 1000 items. Or, send the log to a computer with the syslog application installed.

6.3.1 How to view the Registration log

The Registration log displays a list of all satellite registrations. To view the Registration log, do the following:

1. Click [Log] in the menu bar.
2. Click [Registration]. The following Registration log screen appears:


Main
SMS
Contacts
SIM
Settings
Device
Log
Selftest
Registration
Voice call
Data connection
Error log
System log
Registration log
Save CSV
①
②
③
④
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Date	Sat ID	Voice	Data
13-01-11 07:25:58	5	Success	Success
13-01-11 06:56:13	5	Success	Success
13-01-11 06:48:04	5	Success	Success
13-01-11 06:47:35	5	Success	Success
13-01-11 06:33:38	5	Success	Success
13-01-11 06:32:27	5	Success	Success
13-01-11 06:31:18	5	Success	Success
13-01-11 06:30:16	5	Success	Success
13-01-11 05:49:31	5	Success	Success
13-01-11 05:48:28	5	Success	Success
13-01-11 05:43:05	5	Success	Success
13-01-11 05:41:33	5	Success	Success
13-01-11 05:40:29	5	Success	Success
13-01-11 05:32:30	5	Success	Success
13-01-11 05:13:34	5	Success	Success
13-01-11 05:13:25	5	Success	Success
13-01-11 05:12:09	5	Success	Success
13-01-11 05:10:37	5	Success	Success

① Registration date and time

② Registered satellite ID

③ Voice communication
(”Success” or “---”)

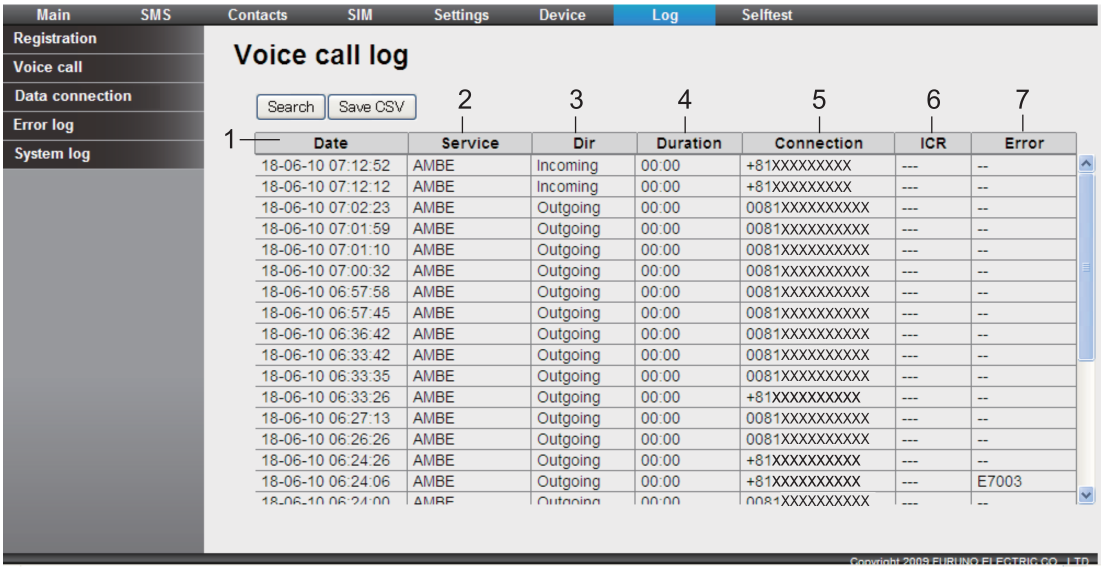
④ Data communication
(”Success” or “---”)

3. To save the log as a CSV file, do the following:
   1) Click the [Save CSV] button.
   2) Click the [Save] button.
   3) Select where to save the file, and click the [Save] button again.

6.3.2 How to view the Voice call log

Do the following to view the Voice call log:

1. Click [Log] in the menu bar.
2. Click [Voice call]. The following Voice call log screen appears:


Main
SMS
Contacts
SIM
Settings
Device
Log
Selftest
Registration
Voice call
Data connection
Error log
System log
Search
Save CSV
1
2
3
4
5
6
7
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Voice call log

Date	Service	Dir	Duration	Connection	ICR	Error
18-06-10 07:12:52	AMBE	Incoming	00:00	+81XXXXXXXXX	---	--
18-06-10 07:12:12	AMBE	Incoming	00:00	+81XXXXXXXXX	---	--
18-06-10 07:02:23	AMBE	Outgoing	00:00	0081XXXXXXXXXX	---	--
18-06-10 07:01:59	AMBE	Outgoing	00:00	0081XXXXXXXXXX	---	--
18-06-10 07:01:10	AMBE	Outgoing	00:00	0081XXXXXXXXXX	---	--
18-06-10 07:00:32	AMBE	Outgoing	00:00	0081XXXXXXXXXX	---	--
18-06-10 06:57:58	AMBE	Outgoing	00:00	0081XXXXXXXXXX	---	--
18-06-10 06:57:45	AMBE	Outgoing	00:00	0081XXXXXXXXXX	---	--
18-06-10 06:36:42	AMBE	Outgoing	00:00	0081XXXXXXXXXX	---	--
18-06-10 06:33:42	AMBE	Outgoing	00:00	0081XXXXXXXXXX	---	--
18-06-10 06:33:35	AMBE	Outgoing	00:00	0081XXXXXXXXXX	---	--
18-06-10 06:33:26	AMBE	Outgoing	00:00	+81XXXXXXXXXX	---	--
18-06-10 06:27:13	AMBE	Outgoing	00:00	0081XXXXXXXXXX	---	--
18-06-10 06:26:26	AMBE	Outgoing	00:00	0081XXXXXXXXXX	---	--
18-06-10 06:24:26	AMBE	Outgoing	00:00	+81XXXXXXXXXX	---	--
18-06-10 06:24:06	AMBE	Outgoing	00:00	+81XXXXXXXXXX	---	E7003
18-06-10 06:24:00	AMBE	Outgoing	00:00	0081XXXXXXXXXX	---	--

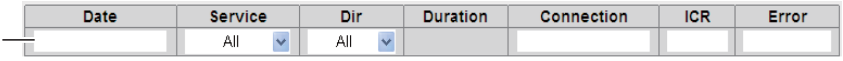
1 Communication start date and time
2 Communication service type
3 Incoming / outgoing communication
4 Communication time (min:sec)
5 Caller ID ("No-caller-ID" appears if caller is unkown)
6 Status of internal call routing

Status	Meaning
4 digits number (Extension number)	Transfer successful
4 digits number + X	Transfer failed and disconnected by calling party.
X only	No operation, automatically disconnected.
4 digits number + #	Transfer failed and all terminals have been called automatically.
# only	All terminal have been called by user.
---	Internal call routing disabled.

7 Error code ("--" displays if there is no error)

3. To search the log, do the following:
   1) Click the [Search] button to display the Search bar. (Click the [Search] button again to hide the Search bar).

Search bar


Date
Service
All
Dir
All
Duration
Connection
ICR
Error

   2) To search by date, enter part or all of the date in the [Date] field. To search by phone number, enter part or all of the number in the [Connection] field. Matching search results appear below the Search bar.

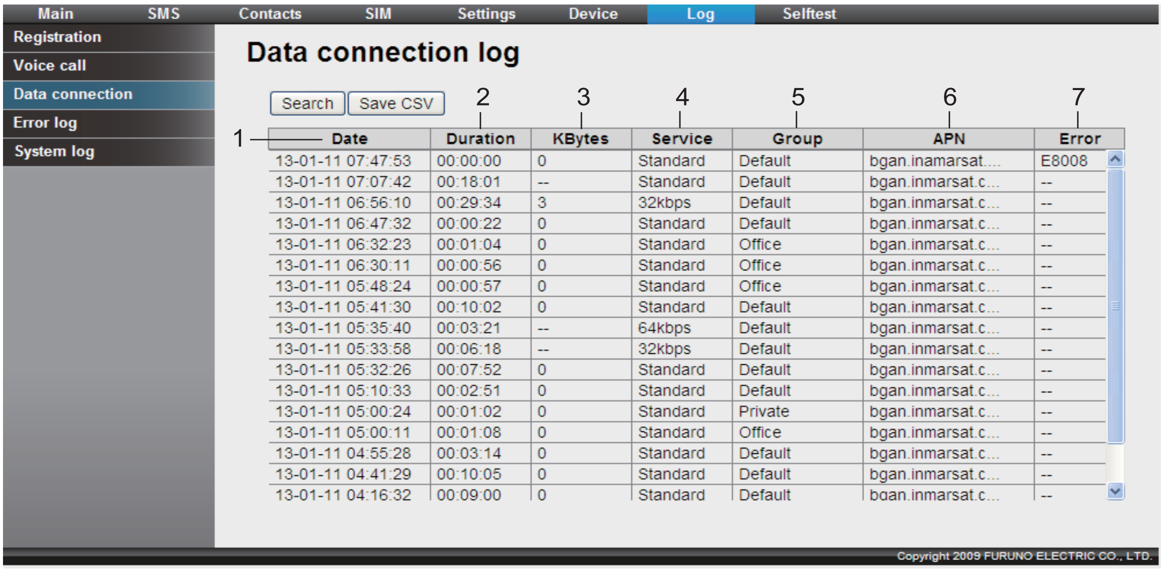
Note: If select [AMBE], [3.1kHz Audio], [RDI] or [UDI] in the [Service] list, only the corresponding logs are displayed. Or, if [Outgo] in the [Dir] list box is selected, only outgoing messages are displayed.

4. To arrange the log in ascending or descending order, do the following:
    1) At the top of the log list, click either [Date], [Service], [Dir], [Duration], [Connection], or [Error]. ▲ appears beside the selected item.
    2) Click the item again to change between ▲ (ascending) or ▼ (descending) order.
5. To save the log to a CSV file, click the [Save CSV] button. (refer to section 6.3.1 for detailed information).

6.3.3 How to view the Data connection log

To view the Data connection log do the following:

1. Click [Log] in the menu bar.
2. Click [Data connection]. The Data connection log screen displays:



Date	Duration	KBytes	Service	Group	APN	Error
13-01-11 07:47:53	00:00:00	0	Standard	Default	bgan.inamarsat....	E8008
13-01-11 07:07:42	00:18:01	--	Standard	Default	bgan.inmarsat.c...	--
13-01-11 06:56:10	00:29:34	3	32kbps	Default	bgan.inmarsat.c...	--
13-01-11 06:47:32	00:00:22	0	Standard	Default	bgan.inmarsat.c...	--
13-01-11 06:32:23	00:01:04	0	Standard	Office	bgan.inmarsat.c...	--
13-01-11 06:30:11	00:00:56	0	Standard	Office	bgan.inmarsat.c...	--
13-01-11 05:48:24	00:00:57	0	Standard	Office	bgan.inmarsat.c...	--
13-01-11 05:41:30	00:10:02	0	Standard	Default	bgan.inmarsat.c...	--
13-01-11 05:35:40	00:03:21	--	64kbps	Default	bgan.inmarsat.c...	--
13-01-11 05:33:58	00:06:18	--	32kbps	Default	bgan.inmarsat.c...	--
13-01-11 05:32:26	00:07:52	0	Standard	Default	bgan.inmarsat.c...	--
13-01-11 05:10:33	00:02:51	0	Standard	Default	bgan.inmarsat.c...	--
13-01-11 05:00:24	00:01:02	0	Standard	Private	bgan.inmarsat.c...	--
13-01-11 05:00:11	00:01:08	0	Standard	Office	bgan.inmarsat.c...	--
13-01-11 04:55:28	00:03:14	0	Standard	Default	bgan.inmarsat.c...	--
13-01-11 04:41:29	00:10:05	0	Standard	Default	bgan.inmarsat.c...	--
13-01-11 04:16:32	00:09:00	0	Standard	Default	bgan.inmarsat.c...	--

1 Communication start date and time

2 Communication time (”Connected” displays under connection)

3 Transmitted data amount（Under connection, data amount is displayed. If Streaming, “--” is displayed)

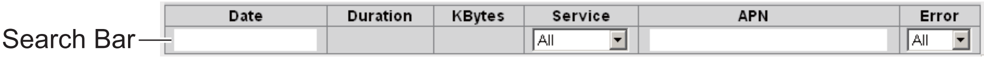
4 Connection service（Standard, 8kbps, 16 kbps, 32kbps, 64kbps, 128kbps, 256kbps (FELCOM500 only))

5 Group name at time saved

6 Name of connection destination

7 Error code (”--” is displayed if there is no error)

3. To search the log, do the following:
    1) Click the [Search] button to display the Search bar. (Click the [Search] button again to hide the Search bar).



    2) To search by date, enter part or all of the date in the [Date] field. If you are searching by group name, enter a part of the name in the Group window. To search by connection, enter part or all of the connection name in the [APN] field.
    Matching search results appear below the Search bar.

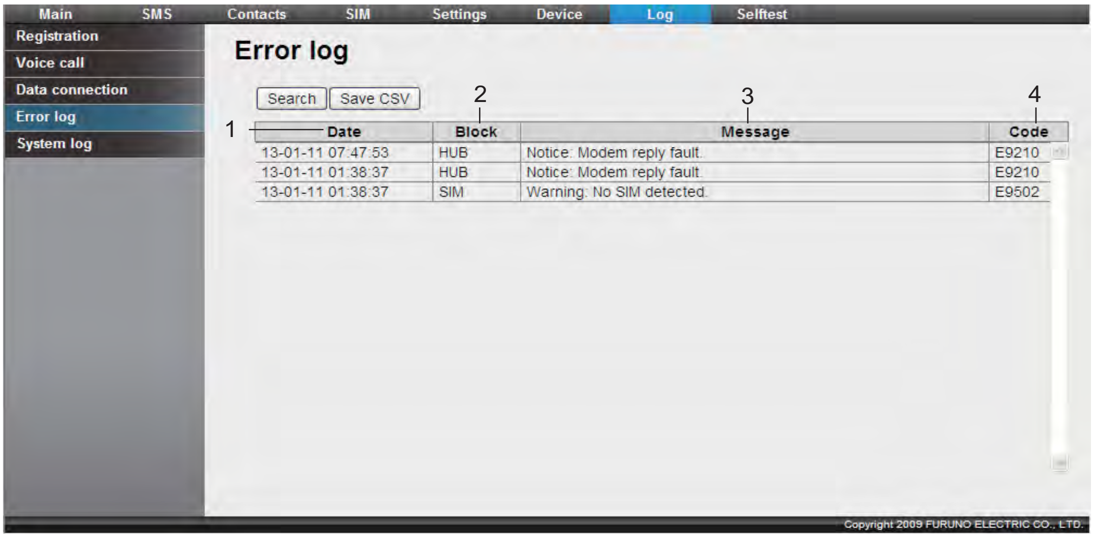
Note: Select [Standard], [8 kbps], [16 kbps], [64kbps], [32kbps], [128kbps] or [256kbps](FELCOM 500 only) from the [Service] listbox to view only the selected service.

4. To arrange the log in ascending or descending order, do the following:
    1) At the top of the log list, click either [Date], [Duration], [KBytes], [Service], [Group], [APN], or [Error]. ▲ appears beside the selected item.
    2) Click the item again to change between ▲ (ascending) or ▼ (descending) order.
5. To save the log to a CSV file, click the [Save CSV] button. (refer to section 6.3.1 for complete information).

6.3.4 How to view the Error log

To view the error log do the following:

1. Click [Log] in the menu bar.
2. Click [Error log]. The following Error log screen displays. Corresponding to the message, the following [Error], [Warning] or [Notice] indicator appears.
    - **Error**: The problem affects the startup of the equipment (refer to section 7.6).
    - **Warning**: The problem limits the functionality of the equipment (refer to section 7.6).
    - **Notice**: The problem does not need to be checked immediately, but there is a problem with the detection accuracy (includes items you may want to leave in the Log).

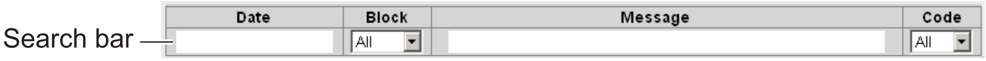

Main
SMS
Contacts
SIM
Settings
Device
Log
Selftest
Registration
Voice call
Data connection
Error log
System log
Search
Save CSV
1
2
3
4
Copyright 2009 FURUNO ELECTRIC CO., LTD.

Error log

Date	Block	Message	Code
13-01-11 07:47:53	HUB	Notice: Modem reply fault.	E9210
13-01-11 01:38:37	HUB	Notice: Modem reply fault.	E9210
13-01-11 01:38:37	SIM	Warning: No SIM detected.	E9502

1 Time and date of error 2 Error location 3 Error contents 4 Error code

3. To search the log, do the following:
    1) Click the [Search] button to display the Search bar. (Click the [Search] button again to hide the Search bar).


Search bar
Date
Block
Message
Code
All
All

    2) To search by date, enter part or all of the date in the [Date] field. To search by error, enter part of the error contents in the [Message] field.
    Matching search results display below the Search bar.

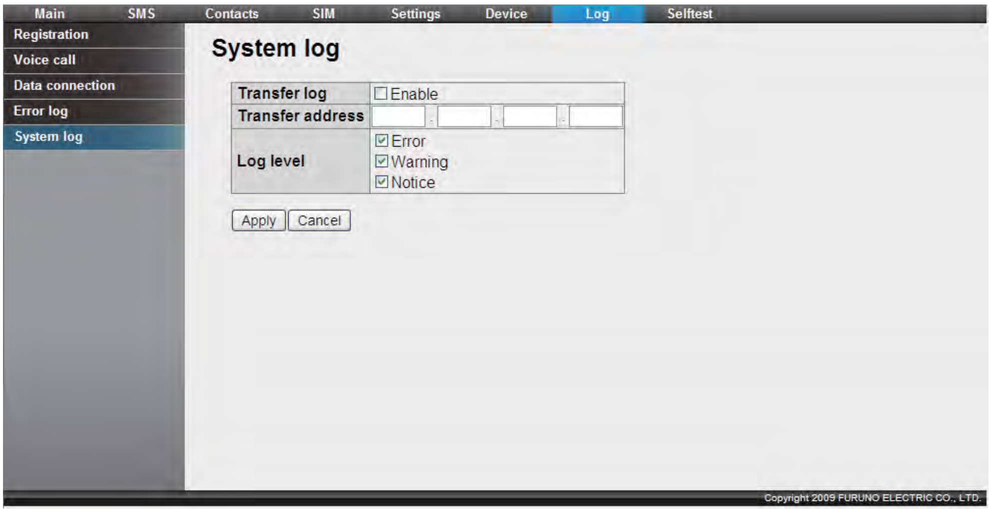
4. To arrange the log in ascending or descending order, do the following:
    1) At the top of the log list, click either [Date], [Block], [Message], or [Code]. ▲ appears beside the selected item.
    2) Click the item again to change between ▲ (ascending) or ▼ (descending) order.

       Note: Select [HUB], [SIM], [Handset], [ADE], or [Modem] from the [Block] listbox to view the selected item only.
5. To save the log to a CSV file, click the [Save CSV] button. (refer to section 6.3.1 for complete information).

6.3.5 How to send the log

You can send the log to a computer with the syslog application installed. Point the IP address at the computer and send.

1. Click [Log] in the menu bar.
2. Click [System log]. The following system log screen is displayed:


Main
SMS
Contacts
SIM
Settings
Device
Log
Selftest
Registration
Voice call
Data connection
Error log
System log
Apply
Cancel
Copyright 2009 FURUNO ELECTRIC CO., LTD.

System log

Transfer log	☐ Enable
Transfer address	. . .
Log level	☑ Error ☑ Warning ☑ Notice

3. Put a [✓] in the checkbox beside [Transfer log].
4. Enter the IP address of the computer to send to in the [Transfer address] field.
5. Put a [✓] by the log to send in the [Log level] field.
6. When finished, click the [Apply] button. The message "The CmmUnit will restart automatically after this setting. Continue?" displays.
7. Click the [OK] button. The message "Completed. Please wait a moment for restarting." displays.
8. Click the [OK] button. FELCOM 250/500 restarts.

6.4 How to Save, Load Settings

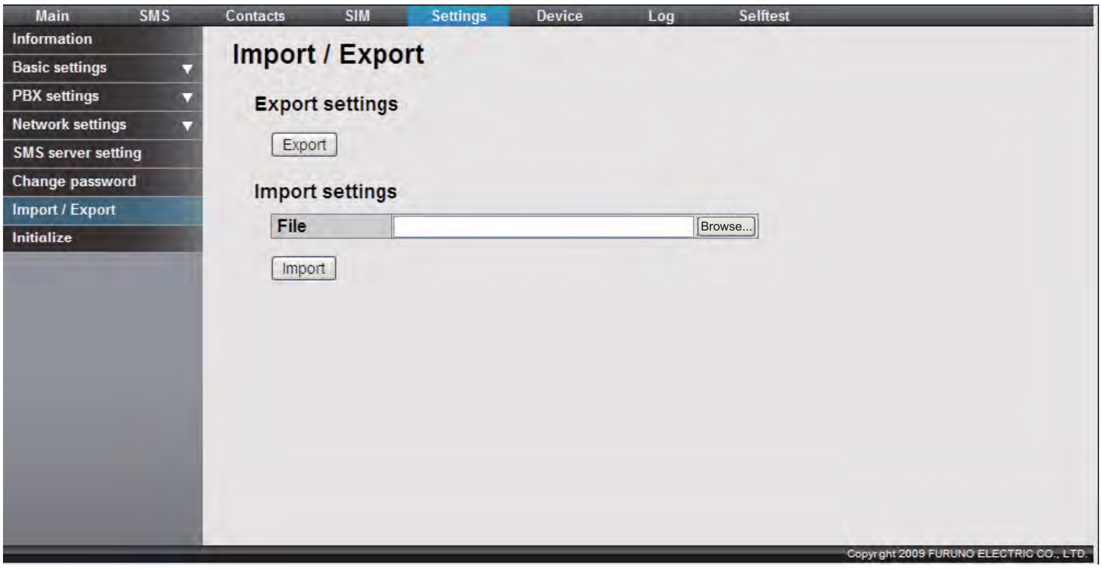
The following web software related settings can be saved.

- Main: Search option for Main Satellite search
- SMS: Signature of SMS settings
- Settings: All basic settings
- Settings: All PBX settings
- Settings: All Network settings

6.4.1 How to save settings

Do the following to save settings.

1. On the menu bar, click [Settings].
2. Click Import/Export to show the following screen.


Main
SMS
Contacts
SIM
Settings
Device
Log
Selftest
Information
Basic settings
PBX settings
Network settings
SMS server setting
Change password
Import / Export
Initialize
Import / Export
Export settings
Export
Import settings
File
Browse...
Import
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3. Click the [Export] button
4. Follow the instructions in the dialog box to save settings.

6.4.2 How to load settings

Do the following to load settings.

1. On the menu bar, click [Settings].
2. Click [Import/Export].
3. Click the [Browse...] button.
4. Select the file to load.
5. Click the [Import] button.
   The message "The Cmm Unt will restart automatically after this settings. Continue?" appears.
6. Click the [OK] button. When completed the message "Completed. Please wait a moment restarting" appears and then the communication unit restarts. Wait until restart is completed.

7. MAINTENANCE AND TROUBLESHOOTING

This chapter describes maintenance and troubleshooting procedures to keep the equipment in good condition and restore normal operation in case of trouble.

⚠ WARNING

ELECTRICAL SHOCK HAZARD
Do not open the equipment.

This equipment uses high voltage that can cause electrical shock.
0nly qualified persons can work inside the equipment.

NOTICE

Do not apply paint, anti-corrosive sealant or contact spray to plastic parts or equipment coating.

Those items contain products that can damage plastic parts and equipment coating.

7.1 Periodical Maintenance

Check item	Checkpoint	Countermeasure
Cable (Connector)	Check that all cables are connected tightly and free of corrosion.	If necessary, connect loosened cables, etc. If a cable is damaged, replace immediately.
Ground terminal	Check that the ground wire connected to the terminal is tightly fastened and the terminal is free of dust, dirt and rust.	Remove dust and dirt from the terminal. Tighten the wire if it has loosened.
Communications unit Handset	Check that there is no dust or dirt on the unit.	Clean the unit with a soft, dry cloth. If the unit is very dirty, clean with water-diluted mild detergent and soft cloth. Wipe unit with clean cloth after on a wet cloth then with a dry cloth. Do not use alcohol or paint thinners, as they can remove writing and marks on the panel.

Check item	Checkpoint	Countermeasure
Handset LCD Screen	Check the screen for dust and dirt, and that there are no cracks on the screen.	Wipe the LCD carefully to prevent scratching, using tissue paper and an LCD cleaner. To remove dirt or salt deposits, use an LCD cleaner, wiping slowly with tissue paper so as to dissolve the dirt or salt. Change paper frequently so the salt or dirt will not scratch the LCD. Do not use solvents such as thinner, acetone or benzene for cleaning.

7.2 How to Change the Fuse

⚠ WARNING

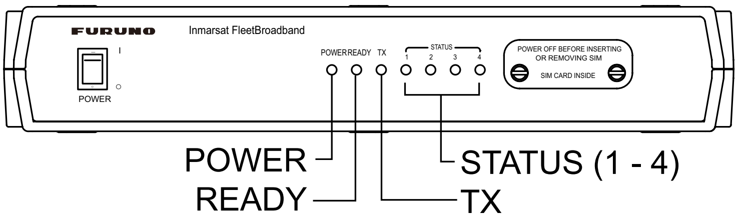
Use the proper fuse.

Use of a wrong fuse can result in damage to the equipment and cause fire.

The fuse in the power cable protects the unit from overcurrent. If you cannot turn on the power, check if the fuse has blown. If the fuse has blown find the cause before replacing the fuse. If the fuse blows again after replacement, call your dealer for advice.

Part	Type	Code number	Description
Fuse	FGBO 125V 15A PBF	000-155-827-10	for 12 VDC
	FGBO 125V 7A PBF	000-155-831-10	for 24 VDC

7.3 Communication Unit (CU) LED Lamps


FURUNO
Inmarsat FleetBroadband
I
O
POWER
POWER READY TX
STATUS
1 2 3 4
POWER OFF BEFORE INSERTING OR REMOVING SIM
SIM CARD INSIDE
POWER
READY
STATUS (1 - 4)
TX

The communication Unit LED lamps indicate the status of the antenna unit and the CU. Refer to the following table:

Communication Unit Lamp Status

LED	Lamp Status	Status	Note
Power	On	Power is On	Normal state
	Off	Power is Off	
Ready	On	Tracking satellite	Normal state
	Flashing (1 sec. interval)	Detecting satellite signal	Immediately after power on
	Off	Searching for satellite	Immediately after power on
Tx	On	Transmitting	Normal state
	Off	Not transmitting	Normal state
Status 1	On	Modem in communication unit is operating normally	Normal state
	Flashing (1 sec. interval)	Problem with the modem	Warning
	Flashing (0.2 sec. interval)	Modem has significant problem	Error
Status 2	On	HUB in communication unit is operating normally	Normal state
	Flashing (1 sec. interval)	Problem with one part of the HUB	Warning
	Flashing (0.2 sec. interval)	HUB has significant problem	Error
Status 3	On	Antenna is operating normally	Normal state
	Flashing (1 sec. interval)	Problem with one part of the antenna	Warning
	Flashing (0.2 sec. interval)	Antenna has significant problem	Error

LED	Lamp Status	Status	Note
Status 4	On	Handset is operating normally	Normal state
	Flashing (1 sec. interval)	Problem with the handset	Warning
	Flashing (0.2 sec. interval)	Handset has significant problem	Error

If one of the Status LEDs 1- 4 is flashing, open the Web software on the PC to check the message. (See section 7.6.)

7.4 Troubleshooting

If you think the equipment is not operating normally, do the checks in the table below to find the possible causes. If repair of the equipment is necessary report the result of the troubleshooting to the service technician. If you are asked the IMEI (International Mobile Equipment Identify) number, do the following to find it.

- Handset: At the idle screen, press [*], [#], [0], [6], [#].
- Web software: On the menu bar, click [Main], [System information].

Troubleshooting

Condition	Check point
No power (POWER lamp on communication unit does not illuminate).	• Check if the fuse has blown. • Check if the power connector has loosened. • Check if the power cable is rusted or damaged. • Check if the power cable is damaged. • Check if the voltage of the ship battery is within range (10.8 - 31.2V DC).
Nothing displays on handset screen.	• Check if the handset cable is properly connected to the communication unit. • Check the brightness level of screen is not too dark
The handset keys do not respond.	Push and hold the ☎ key for 3 seconds to restart the handset. If keys continue to not respond after restart, contact your dealer.
Does not become [Ready] status.	• Check if the antenna cable is properly connected. • Check that there are no objects blocking the signal between antenna and satellite. • In the Web software, do Main → satellite search to do a manual satellite search. • Check if the ship position data is correct (“No fix” appears, etc.). • In the Web software, do Settings → Basic Settings → GPS to check if the backup GPS is set correctly.

Condition	Check point
Cannot make external call.	• Check telephone number. Land subscriber: [00], country code, tel. no. Ship subscriber: [00], [870], (ocean area code), Inmarsat no. • Check if the handset cable is properly connected to the communication unit. • Check if the handset screen shows [V:Ready]. • Wait a while, and retry. • In the Web software, check Settings → PBX Settings →Call limit to check that handset mode is NOT set to [Extension only] or [Incoming only]. • Check that same extension number and password are entered in the handset and web software.**Handset:** Settings → 3 SIP → 1 Client set. **Web software:** Settings → PBX settings → Extension
Cannot make internal call.	• Check that the handset and/or analog phone cables are properly connected to the communication unit. • If using an analog phone, do Settings → Basic settings → Analog ports on the Web software to see that the phone number is not wrong. • In the web software, do Settings → PBX settings → Call limit to see that handset mode is NOT set to [Outline only] or [Incoming only]. • Check that same extension number and password are entered in the handset and web software. **Handset:** Settings → 3 SIP → 1 Client set. **Web software:** Settings → PBX settings → Extension
Cannot use the internet.	• Check that the handset screen displays [D: Connected] and the Web software displays [Data connection Connected]. • Check internet connection settings on the PC.
Incoming Indicator does not sound.	• Check that the cable between incoming indicator and Communication unit is correctly connected. • Adjust the incoming indicator volume. Press ▲ to increase the volume. • In the Web software, do Settings → Basic settings → Incoming indicator (enabled service) and see if Voice (telephone), FAX, ISDN UDI, ISDN RDI (UDI/RDI FELCOM 500 only) are checked.

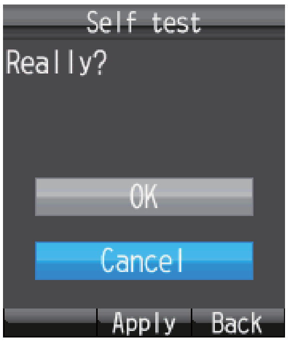
7.5 Self Test

If the Communication Unit is acting unusual, do a self test to check function. If service is necessary report the results of the self test to the service technician.

7.5.1 Handset self test

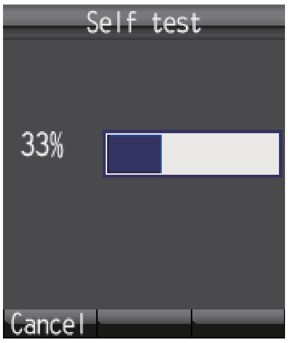
1. At the idle screen, press the **Enter** key to open the main menu.

2. Press ▼ to select the [Settings] icon and press the **Enter** key.
3. Press **6** to select [Self test]. The operation password prompt appears.
4. Press the **Enter** key.
5. Enter the operation password and press the **Enter** key.
6. Press ▼ to select [OK] and press the **Enter** key. The following confirmation screen appears:

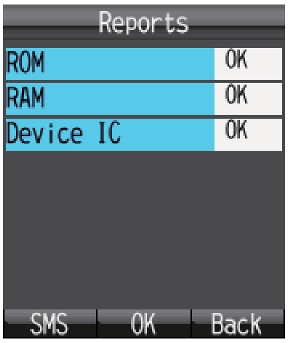


Really?

7. Press ▲ to select [OK] and press the **Enter** key to start the handset self test. The test goes in the sequence shown below.



Testing



ROM OK
RAM OK
Device IC OK

Done

The results of the ROM, RAM, and Device IC are shown as [OK] (normal) or [NG] (No Good, error). For error, consult your dealer for advice.

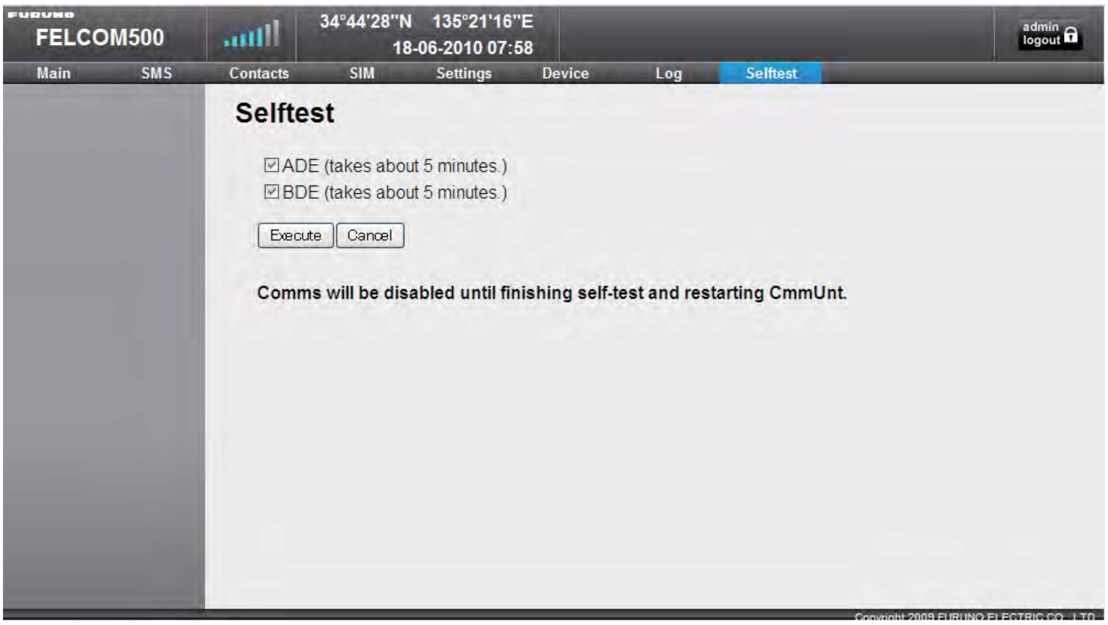
8. To close the test results, press the **Enter** key. The [Settings] menu appears.
9. Press the ☎ key to close the menu.

Note: To send the results of the test, press the 🔊 key to show [Create SMS], where you can create and SMS message.

7.5.2 Communication unit and antenna unit self test

The communication unit and antenna unit can be tested with the Web software.

1. Login as Administrator in the Web software.
2. Click [Selftest] in the menu bar to show the [Selftest] screen.


FURUNO
FELCOM500
admin
logout
Main
SMS
Contacts
SIM
Settings
Device
Log
Selftest
Execute
Cancel
Copyright 2009 FURUNO ELECTRIC CO., LTD.

34°44'28"N 135°21'16"E
18-06-2010 07:58

Selftest

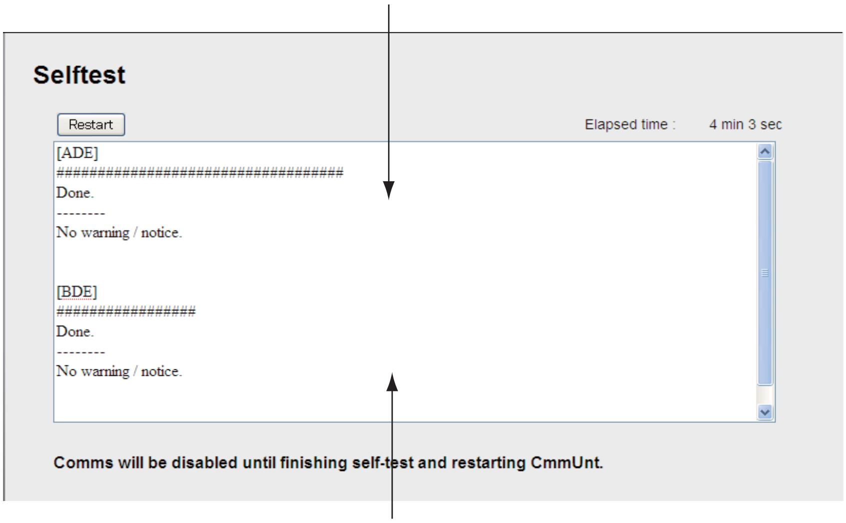
☑ADE (takes about 5 minutes.)
☑BDE (takes about 5 minutes.)

Comms will be disabled until finishing self-test and restarting CmmUnt.

3. To test the antenna unit, select [ADE]. To test the Communication Unit, select [BDE].
4. Click [Execute].
5. Click [OK] to start the self test. Each test takes approximately five minutes to complete.

   Note: Do not navigate to another screen in the web browser or reset the power during the self test.

Antenna Unit Test Results



Selftest

Elapsed time : 4 min 3 sec

```
[ADE]
#####################################
Done.
--------
No warning / notice.


[BDE]
##################
Done.
--------
No warning / notice.
```

Comms will be disabled until finishing self-test and restarting CmmUnt.

Communication Unit Test Results

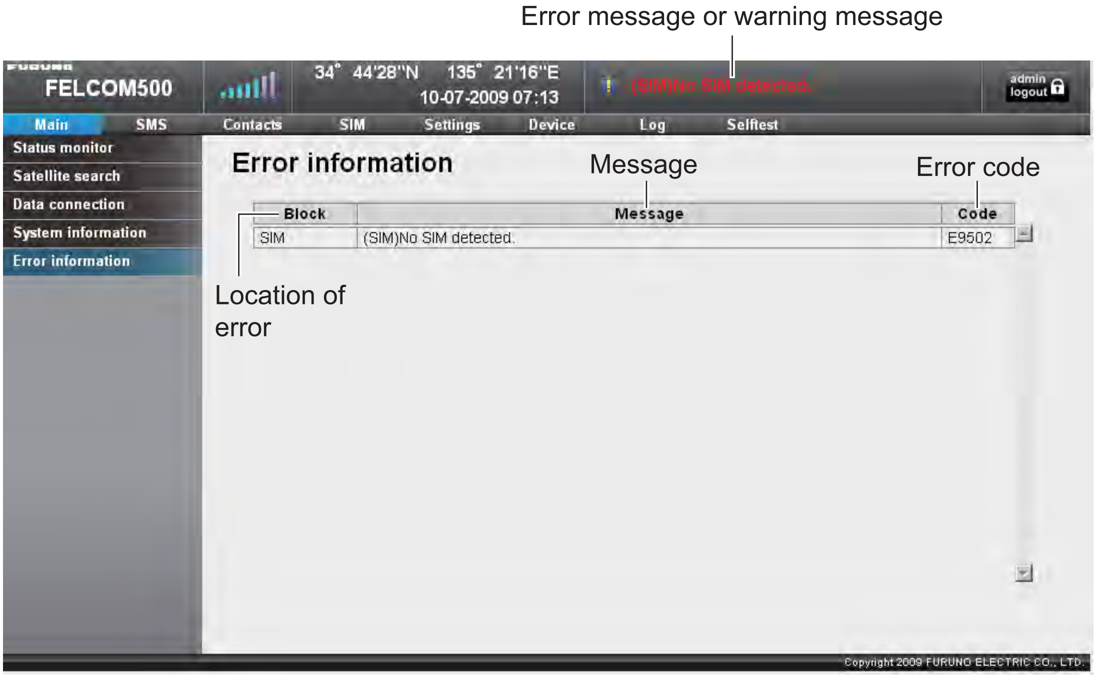
Ensure that the test results for all items are [No warning/notice]. If [No warning/Notice] does not display for all items, contact your dealer.

6. Click the [Restart] button to restart the system.

Note: The communication is disabled when you execute the self test. After completing the self-test, click the [Restart] botton.

7.6 Error/Warning Messages

When a problem occurs, an Error or Warning message appears in the system message display area. Detailed Error and Warning messages (max 100 messages) appear in [Main] → [Error information]. The location of the occuring error/warning message is displayed, so it is possible to specify and indicate the faulty module.


Error message or warning message
FURUNO
FELCOM500
34° 44'28"N 135° 21'16"E
10-07-2009 07:13
admin logout
Main
SMS
Contacts
SIM
Settings
Device
Log
Selftest
Status monitor
Satellite search
Data connection
System information
Error information
Message
Error code
Location of error
Copyright 2009 FURUNO ELECTRIC CO., LTD.

(SIM)No SIM detected.

Error information

Block	Message	Code
SIM	(SIM)No SIM detected.	E9502

The following is a list of Error and Warning messages. An Error message appears when a critical error occurs, and the unit can not function. A Warning message is displayed when an error occurs, and the unit can only operate with limited function.

Perform a general inspection of the unit. When an Error/Warning message appears, do the following.

- Reset the power.
- Make sure all cables and connectors are correctly connected.
- If the normal operation cannot be restored, contact a service technician. Report the error messages to the technician.

Error Code	Type	Message	Cause	Location of error
9001	Error	Connection Failure between Comm Unit and Ant. Unit.	ADE not connected.	ADE
9201	Error	PoEthernet total output fault.	PoE exceeds 30W.	HUB
9202	Error	PoEthernet port output fault.	PoE port failure (when provisioning PoE of different class).	HUB
9204	Error	Invalid MAC address. Please contact FURUNO service.	MAC address is invalid. (Check MAC address of HUB.)	HUB
9209	Error	FPGA fault	FPGA error.	HUB
9214	Error	Audio Codes initialization fault.	Audio Codes initialization fault.	HUB
9301	Error	FPGA fault.	FPGA error.	Modem
9303	Error	Loading DSP1 fault.	DSP1 loading error.	Modem
9304	Error	DSP1 fault.	DSP1 error.	Modem
9305	Error	Loading DSP2 fault	DSP2 loading error.	Modem
9306	Error	DSP2 fault	DSP2 error.	Modem
9307	Error	Loading DSP3 fault.	DSP3 loading error.	Modem
9308	Error	DSP3 error.	DSP3 error.	Modem
9309	Error	HPI fault	HPI error.	Modem
9314	Error	Invalid IMEA data. Please contact FURUNO service.	IMEI writing error.	Modem
9401	Error	Rx PLL unlock.	Rx PLL unlocked.	IF
9402	Error	Tx PLL unlock.	Tx PLL unlocked.	IF
9101	Warning	Cable calibration fault.	Cable not calibrated.	HPA
9102	Warning	Fan fault.	Fan fault.	HPA

Error Code	Type	Message	Cause	Location of error
9103	Warning	HPA output fault	HPA not output (at Tx).	HPA
9104	Warning	HPA temperature fault	Abnormal temperature	HPA
9105	Warning	Spurious transmission detected.	Spurious detection (at TX)	HPA
9203	Warning	PoEthernet Controller fault.	PoE controller error.	HUB
9207	Warning	Controller fault	HUB controller error.	HUB
9211	Warning	No reply from Modem.	Modem error / no response from modem.	HUB
9212	Warning	ROM fault	ROM error	HUB
9213	Warning	RAM fault	RAM error	HUB
9302	Warning	Getting GPS fault.	No GPS information (60 seconds or more).	Modem
9310	Warning	Temperature low.	Temperature error (too low).	Modem
9311	Warning	Temperature high.	Temperature error (too high).	Modem
9312	Warning	5V power supply fault.	Power voltage error (5V).	Modem
9313	Warning	6V power supply fault.	Power voltage error (6V).	Modem
9315	Warning	NMEA port fault.	NMEA port error.	Modem
9316	Warning	SIM port fault	SIM port error.	Modem
9317	Warning	RAM fault	RAM error.	Modem
9318	Warning	Cipher modem fault.	KASUMI error.	Modem
9403	Warning	IF:Temperature low.	IF temperature error (too low).	IF
9404	Warning	IF:Temperature high.	IF temperature error (too high).	IF
9502	Warning	No SIM detected.	SIM card not inserted.	SIM
9504	Warning	Wrong type card.	No support for SIM card type. (checks when card is entered, notice displays for 1 second).	SIM
9507	Warning	PIN is blocked.	Pin code is blocked (regulated number of tries exceeded).	SIM
9508	Warning	PUK is blocked (SIM is not available).	PUK code is blocked (regulated number of tries exceeded).	SIM

Error Code	Type	Message	Cause	Location of error
9509	Warning	Access fault.	Cannot access SIM (checks when card is entered, notice displays for 1 second).	SIM
9603	Warning	PHY IC fault.	Device error (cannot access PHY IC).	Handset
9604	Warning	CODEC IC fault.	Device error (cannot access CODEC IC).	Handset
9605	Warning	LCD fault.	Device error (cannot access LCD).	Handset

The explanation of error codes E9102 and E9104

- Error code E9102

Message:	FAN Fault.
Contents:	Warning for fan in Antenna Unit Transmission Amplifier
Occurrence phenomena:	If HPA temperature is normal, communications are not affected. Confirm HPA temperature in the Main/Status Monitor screen.
Action:	If the HPA temperature is normal (below approx. 90 °C), continue using as normal. Have a qualified service technician check the set. The warning shows fluctuation in fan speed. This may be shown even when the fan is operating.

- Error code E9104

Message:	HPA temperature fault
Contents:	Temperature warning in Antenna Unit Transmission Amplifier
Occurrence phenomena:	Possibility of complete communication failure
Action:	In the case of complete communication failure, restart the unit. After restarting, if the HPA temperature is normal (below approx. 90 °C), communication may be possible, so use with caution for the HPA temperature. If the HPA temperature is high, continue using while avoiding long conversations or data transmissions. Have a qualified service technician check the set.

7.7 How to Restore Default Settings (Initialize)

You can restore default settings for the handset and Web software. Data is deleted when default settings are restored. Data cannot be recovered so restore default settings with caution.

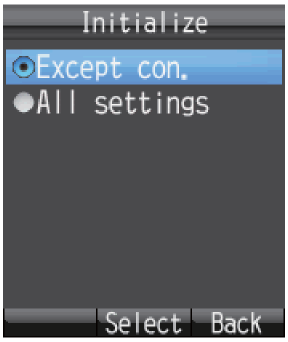
7.7.1 Handset initialization

There are two methods to restore the handset to default settings:

Refer to the following table for detailed guide on what settings are included in the reset:

Item	Except con.	All settings
[Web top] menu: [1 Input URL] -> [Input History]	No	No
[Web top] menu: [2 Favorites]	No	No
[Web top] menu: Cached web page data	No	No
[Web top] menu: [4 Settings]	Yes	Yes
[SMS] menu: All messages in message box	No	No
[SMS] menu: [6 Settings]	No	Yes
System messages	No	No
All data in Contacts	No	No
[Settings] menu: [1 Basic]	Yes	Yes
[Settings] menu: [2 Network]	No	Yes
[Settings] menu: [3 SIP]	No	Yes
Operation Password	No	Yes

1. At the idle screen press the **Enter** key to open the Main menu.
2. Press ▼ to select [Settings], and press the **Enter** key.
3. Press **5** to select [Initialize]. The password input screen appears.
4. Press the **Enter** key.
5. Enter the operation password and press the **Enter** key.
6. Press ▼ to select [OK], and press the **Enter** key. The Initialize screen displays.
7. Press ▲ or ▼ to select the method, and press the **Enter** key.
8. Press ▲ to select [OK], and press the **Enter** key. When reset is finished, the message "Initialized." displays.



7.7.2 Web software initialize

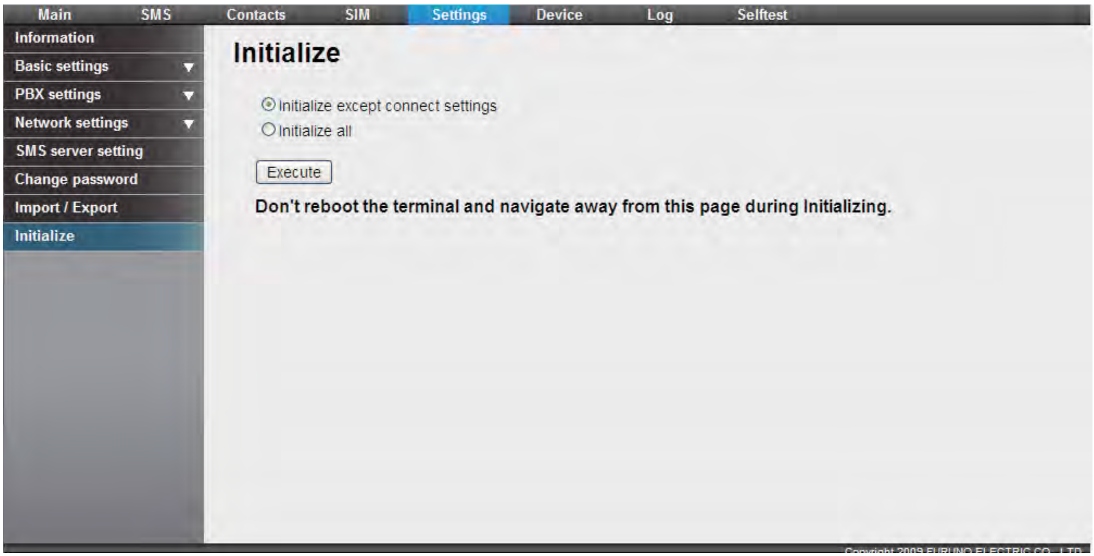
There are two methods to initialize (reset) the Web software: [Initialize except connection settings] and [Initialize all]. The results differ based on which method used:

Item	Initialize Except Connect Settings	Initialize ALL
Main: Satellite Search Option	Yes	Yes
SMS: all SMS box (SIM)	No	No
SMS: SMS Settings	Yes	Yes
Contacts: All Contacts	No	No
SIM: All SIM Data	No	No
Settings(Basic): GPS, Serial Port	Yes	Yes
Settings(Basic): Incoming Indicator	Yes	Yes
Settings(Basic): Analog Port	No	Yes
Settinsg(Basic): Satellite	No	No
Settings(Basic): OTA	Yes	Yes
Settings(PBX settings): Incoming Routing, Call Limit, Group	Yes	Yes
Settings(PBX settings): Extension	No	Yes
Settings(Network setting): LAN IP Address, Subnet Mask	No	Yes
Settings(Network settings): LAN/DHCP	No	Yes
Settings(Network settings): LAN/Routing, RIP, VRRP	Yes	Yes
Settings(Network settings): WAN	Yes	Yes
Settings(Network settings): Security	Yes	Yes
Settings(SMS Server): SMS Server Password	Yes	Yes
Settings(Change Password): Administrator Password	Yes	Yes
Device: Device List	Yes	Yes
Log: Log All Log	No	No
Log: System log	Yes	Yes
Settings(PBX settings): Internal Call routing	Yes	Yes

How to initialize:

1. Start Web software and login as Administrator.
2. Click [Settings] in the menu bar to show the [Settings] screen.

3. Click [Initialize] to show the [Initialize] screen.


Main
SMS
Contacts
SIM
Settings
Device
Log
Selftest
Information
Basic settings
PBX settings
Network settings
SMS server setting
Change password
Import / Export
Initialize
Execute
Copyright 2009 FURUNO ELECTRIC CO., LTD.

Initialize

● Initialize except connect settings
○ Initialize all

Don't reboot the terminal and navigate away from this page during Initializing.

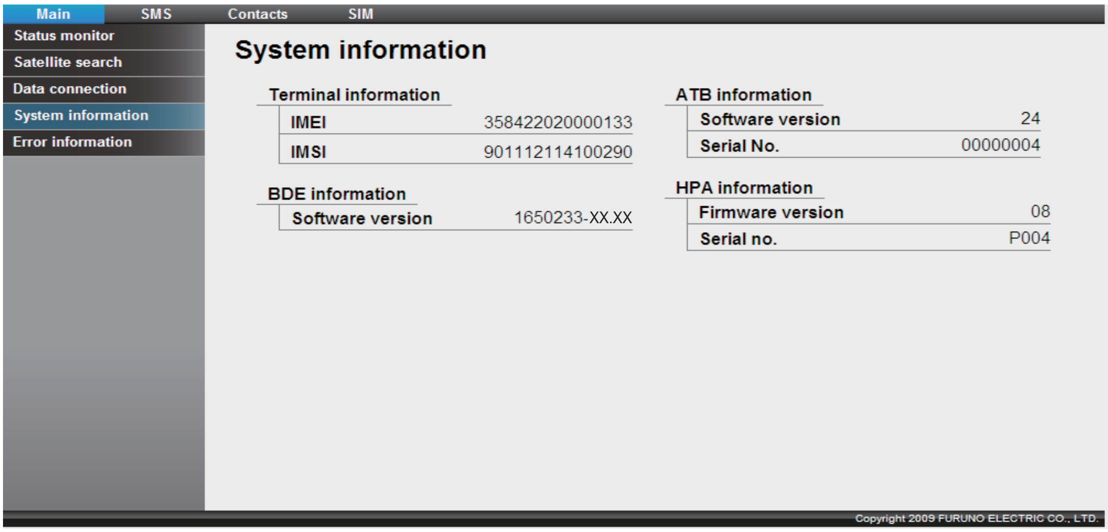
4. Select [Initialize except connection settings] or [Initialize all].
5. Click the [Execute] button.
   The message "Comms will be disabled until finishing initializing and restarting CmmUnt. Are you sure you want to execute?" appears.
6. Click the [OK] button to start the initialization. When finished, the message "Completed. Please wait a moment for restarting." appears,
   Note: Do not switch to another screen or reset the power during the initializing.
7. Click the [OK] button to erase the message.

7.8 System Information

You can view system information on the System Information screen.

How to view system information

1. Click [Main] in the menu bar.
2. Click [System information]. The System information screen is displayed as shown:


Main
SMS
Contacts
SIM
Status monitor
Satellite search
Data connection
System information
Error information
Copyright 2009 FURUNO ELECTRIC CO., LTD.

System information

Terminal information

IMEI	358422020000133
IMSI	901112114100290

BDE information

Software version	1650233-XX.XX

ATB information

Software version	24
Serial No.	00000004

HPA information

Firmware version	08
Serial no.	P004

XX: Program version no.

APPENDIX 1 MENU TREE

Handset Menu Tree

Default settings are presented in **bold** text.

- idle screen Enter key
  - Web
    - 1 Input URL
    - 2 Favorite
    - 3 Last display
    - 4 Settings
      - 1 Font size (Large, **Medium**, Small)
      - 2 Zoom level (200%, 150%, 125%, **100%**, 75%, 50%)
      - 3 Disp. mode (**Normal**, Just-fit, Smart-fit)
      - 4 Advanced (Disp. image, Javascript, Popup window)
      - 5 Timeout (10sec., 20sec., **30sec.**, 60sec.)
      - 6 Clear cache (Yes, **No**)
    - 5 Std. IP (Yes, No)
  - SMS
    - 1 Create new
    - 2 Inbox
    - 3 Sent
    - 4 Draft
    - 5 Recycle bin
    - 6 Settings
      - 1 Signature (ON, **OFF**)
      - 2 Password
  - SysMsg
  - Display
    - 1 Font size (Large, **Medium**, Small)
    - 2 LCD
      - 1 Brightness (1 - 7, default **6**)
      - 2 LCD ON time (Always, **Specify**)
    - 3 Key B. Light (Always ON, **Specify ON**, Always OFF)
  - Contacts
    - 1 New
    - 2 Edit
    - 3 Search
    - 4 Delete
    - 5 Delete all
  - Sound
    - 1 Ext. call
      - 1 Volume (1 - 7, default **5**)
      - 2 Pattern (Pattern No.**1**, 2, 3, 4)
    - 2 Int. call
      - 1 Volume (1 - 7, default **5**)
      - 2 Pattern (Pattern No.1, **2**, 3, 4)
    - 3 SMS
      - 1 Volume (1 - 7, default **5**)
      - 2 Pattern (Pattern No.1, 2, **3**, 4)
    - 4 Sys. Msg.
      - 1 Volume (1 - 7, default **5**)
      - 2 Pattern (Pattern No.1, 2, 3, **4**)
    - 5 Keypad tones (ON, **OFF**)
  - Device
  - ①

①

- Settings
  - 1 Basic
    - 1 Sound
      - 1 Ext. call
        - 1 Volume (1 - 7, default **5**)
        - 2 Pattern (Pattern No.**1**, 2, 3, 4)
      - 2 Int. call
        - 1 Volume (1 - 7, default **5**)
        - 2 Pattern (Pattern No.1, **2**, 3, 4)
      - 3 SMS
        - 1 Volume (1 - 7, default **5**)
        - 2 Pattern (Pattern No.1, 2, **3**, 4)
      - 4 Sys. Msg.
        - 1 Volume (1 - 7, default **5**)
        - 2 Pattern (Pattern No.1, 2, 3, **4**)
      - 5 Keypad tones (ON, **OFF**)
    - 2 Display
      - 1 Font size (Large, **Medium**, Small)
      - 2 LCD
        - 1 Brightness (1 - 7, default **6**)
        - 2 LCD ON time (Always, **Specify**)
      - 3 Key B. Light (Always ON, **Specify ON**, Always OFF)
    - 3 Clock (***Automatic***, Manual)
      - IP address of NTP server
    - 4 Notify
      - 1 Missed call (**ON**, OFF)
      - 2 New SMS (ON, **OFF**)
    - 5 Quick call (Act.: OffHook, **No action**)
    - 6 Echo cancel. (ON, **OFF**)
  - 2 Network
    - 1 Automatic
    - 2 Manual
      - 1 IP obtain (Static IP, **DHCP**)
        - (IP address, Subnet mask, Def. gateway)
      - 2 DNS (Static, **DHCP**)
        - (DNS (Primary), DNS (Secondary))
  - 3 SIP
    - 1 Client set. (Phone number, Password, Nickname)
    - 2 Proxy server (***Automatic***, Manual)
      - IP address
    - 3 S/L port (Server port, Local port)
    - 4 Expire time (1800 - 7200, **3600**)
    - 5 RTP port (RTP port 1, RTP port 2)
  - 4 Password (Old pw., New pw.)
  - 5 Initialize (**Except con.**, All settings)
  - 6 Self test
- Info
  - 1 TCP/IP
  - 2 SIP
  - 3 Software

Web Menu Tree

- Menu bar
  - Main
    - Status monitor
    - Satellite sarch (Satellite list, Search option)
    - Data connection
    - System information
    - Error information
  - SMS
    - Create SMS
    - Inbox
    - Sent
    - Draft
    - Recycle bin
    - SMS settings (Signature, Password)
  - Contacts
  - SIM (PIN Enable/ Disable, Change PIN)
  - Settings
    - Information
    - Basic settings
      - GPS (Backup GPS, GPS monitor)
      - Analog ports
      - Incoming indicator (Ringing pattern of each service, Enabled service)
      - Serial port
      - Satellite
      - OTA
    - PBX settings
      - Incoming routing
        - Voice
        - FAX
      - Call limit
      - Group
      - Extension
      - Internal call routing
    - Network settings
      - LAN
        - IP address
        - Routing
        - RIP
        - VRRP
      - WAN
        - Group settings
        - Common settings
    - SMS sever setting (Current pw., New pw.)
    - Change password (New pw.)
    - Import/Export (Import, export settings)
    - Initialize (**Initialize except connect settings**, Initialize all)
  - Device
    - Device list
    - Auto detect
  - Log
    - Registration
    - Voice call
    - Data connection
    - Error log
    - System log
  - Selftest (ADE, BDE)

APPENDIX 2 LIST OF TERMS AND ABBREVIATIONS

AMBE	Advanced Multi-Band Excitation. A proprietary speech coding standard developed by Digital Voice Systems Inc.
ADE	Above Deck Equipment. In this instance the antenna unit.
Air Interface	Wireless interface.
APN	Access Point Name. Destination name for packet communication.
ASK	Amplitude Shift Keying. The amplitude of an analog carrier signal varies in accordance with the bit stream (modulating signal), keeping frequency and phase constant.
ATB	Antenna Tracking Block. Mechanism inside the antenna unit which tracks the satellite.
BGAN	Broadband Global Area Network. A global satellite network with telephony, FAX and data transfer capability using portable terminals. The service is available with high-speed broadband data communication.
BOOTP	Bootstrap Protocol. A protocol where, on a TCP/IP network, a client machine automatically reads information from the server on start-up.
CS	Circuit Switching. When calling with an analog or ISDN telephone, confirms that connection is made.
CSV	Comma Separated Value. Method of digital storage of data structured in a table of lists form, where each associated item (member) in a group in association with others is also separated by the commas of its set.
DHCP	Dynamic Host Configuration Protocol. A network application protocol used by devices (DHCP clients) to obtain configuration information for operation in an Internet Protocol network.
DHCP Lease	Length of time a DHCP client is allocated to maintain an IP connection to DHCP Server. Usually set by Administrator.
DMZ	DeMilitarized Zone. A physical or logical subnetwork that contains an organization's external services from a larger, untrusted network, usually the Internet.
DNS	Domain Name Service. The mechanism by which an IP address is assigned a name by the host.
DSP	Digital Signal Processor. A specialized microprocessor designed specifically for digital signal processing, generally in real-time computing.
FPGA	Field Programmable Gate Array. A semiconductor device that can be configured by the customer or designer after manufacturing
FTP	File Transfer Protocol. Protocol used to send files on a TCP/IP network, internet, or intranet.

Gateway	Equipment or software used to relay network connections. The “doorway” of the network.
HPA	High Powered Amplifier.
ICCID	Integrated Circuit Card ID. The unique serial number, international number of the mobile user (IMSI), security authentication and ciphering information, temporary information related to the local network, a list of the services the user has access to and two passwords (PIN for usual use and PUK for unlocking).
ICMP	Internet Control Message Protocol. Protocol used to send error and warning messages. Allows networks and connected computers to mutually exchange status information.
IDENT	Identification Protocol. Protocol that sends information about the client to the server.
IMEI	International Mobile Equipment Identifier. A 15-digit number which indicates the model number, manufacturer, producer, and serial number of cell phones and data cards.
IMSI	International Mobile Subscriber Identity. Specific number assigned to individual SIM cards. Enables telephone communication.
IP filter	Software that can be configured to easily deny or allow access to a specific port or address.
IPSec	Internet Protocol Security. A protocol suite for securing Internet Protocol (IP) communications by authenticating and encrypting each IP packet of a data stream.
ISDN	Integrated Service Digital Network. A digital communications network that handles data integration for phones and faxes.
LAN	Local Area Network. Cable, Fibre-optic, etc. network that allows computers in the same geographical area to connect to each other and to other devices such as printers, servers, etc.
LaunchPad	BGAN application software to control devices in the system. CD-ROM supplied by Inmarsat.
MAC address	Media Access Control address. Unique number that identifies each computer on the network. Consists of 6 by 16 decimals.
Metric	The criteria used by the router to select the optimal route.
NBT	NetBIOS over TCP/IP. A networking protocol that allows legacy computer applications relying on the NetBIOS API to be used on modern TCP/IP networks.
nslookup	A command used in troubleshooting DNS service.
NTP	Network Time protocol. A protocol which correctly synchronizes the clock to correct time with the equipment.
OTA	Over The Air. A term meaning wireless communication.
PBX	Private Branch eXchange. A telephone exchange that serves a particular business or office, as opposed to one that a common carrier or telephone company operates for many businesses or for the general public.

PIN	Personal Identification Number. The SIM card identification number.
ping	Confirms if computers and networks are connected.
PPTP	Point-to-Point Tunneling Protocol. A method for implementing virtual private networks. PPTP does not provide confidentiality or encryption; It relies on the protocol being tunneled to provide privacy.
Proxy server	A server that acts as a go-between for requests from clients seeking resources from other servers.
PS	Packet Switching. A method of communication that separates data into small units (packets) and sends them individually.
PUK	PIN Unblocked Key. If the PIN is entered incorrectly 3 times the SIM card is blocked. Use the PUK code to unblock the SIM.
RDI	Restricted Digital Information. ISDN terminology for information or data that is restricted.
RIP	Routing Protocol Information. A routing protocol for UDP/IP. Determines the shortest route to reach the network by calculating the path to the dynamic host based on the number of hops through routers.
RTP	Real-time Transport Protocol. A standardized packet format for delivering audio and video over the Internet.
RSSI	Received Signal Strength Indicator. Measures the strength of the wireless communication device.
SIM	Subscriber Identity Module. An IC card that stores the registered users subscriber number, phone number and information. When inserted into a terminal, the terminal operates on this information.
SIP	Session Initiation Protocol. A protocol for converting multimedia data into packets over an IP network. A standardized method of audio and video coding.
SIP server	DNS server that acts as a proxy for each domain name based on location of each domain.
SMS	Short Message Service. A method of sending short messages over mobile devices.
Streaming	A method transmitting audio, visual and multimedia where the data is transmitted and played back simultaneously.
UDI	Unrestricted Digital Information. ISDN terminology for the transmission capacity of data, video conferences, and G4 fax machines.
UPnP	Universal Plug and Play. Network equipment, software and hardware that provides compatibility between peripherals and network architecture.
URL	Uniform Resource Locator. Specifies where an identified resource is available and the mechanism for retrieving it. In popular language, a URL is also referred to as a Web address.
User Account	A character string that defines individual user settings on a computer. Generally in the form of a user name and password.

VPN	Virtual Private Network. A computer network in which some of the links between nodes are carried by open connections or virtual circuits in some larger networks (such as the Internet), as opposed to running across a single private network.
VRRP	Virtual Router Redundancy Protocol. A router multiplexing protocol. Two or more routers are configured as a default gateway. One router will automatically take over if the other router is faulty.
WAN	Wide Area Network. Using a telephone line or dedicated line two connect two or more computers in a geographically different location.

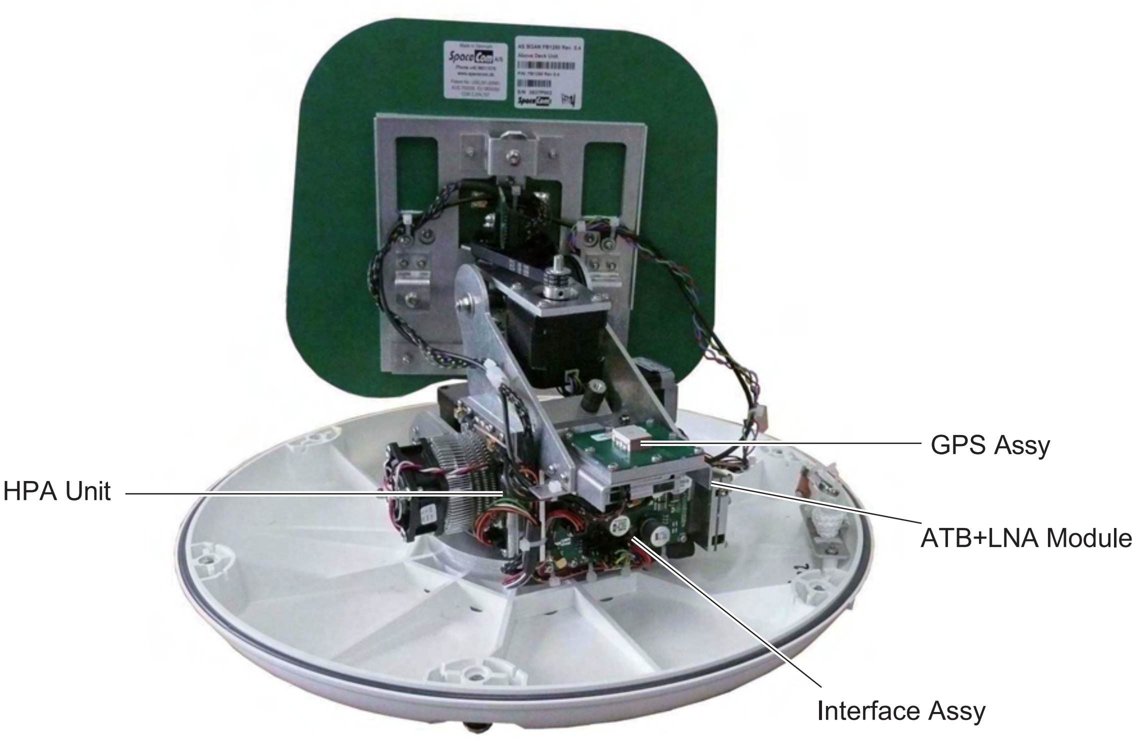
APPENDIX 3 PARTS LIST, ARRANGEMENT

This equipment contains complex modules in which fault diagnosis and repair down to the component level is not practical (IMO A,694(17)/8.3.1). Only some discrete components are used. FURUNO Electric Co., Ltd. believes identifying these components is of no use for shipborne maintenance; therefore, they are not listed in the manual. Major modules can be located in Parts Location.

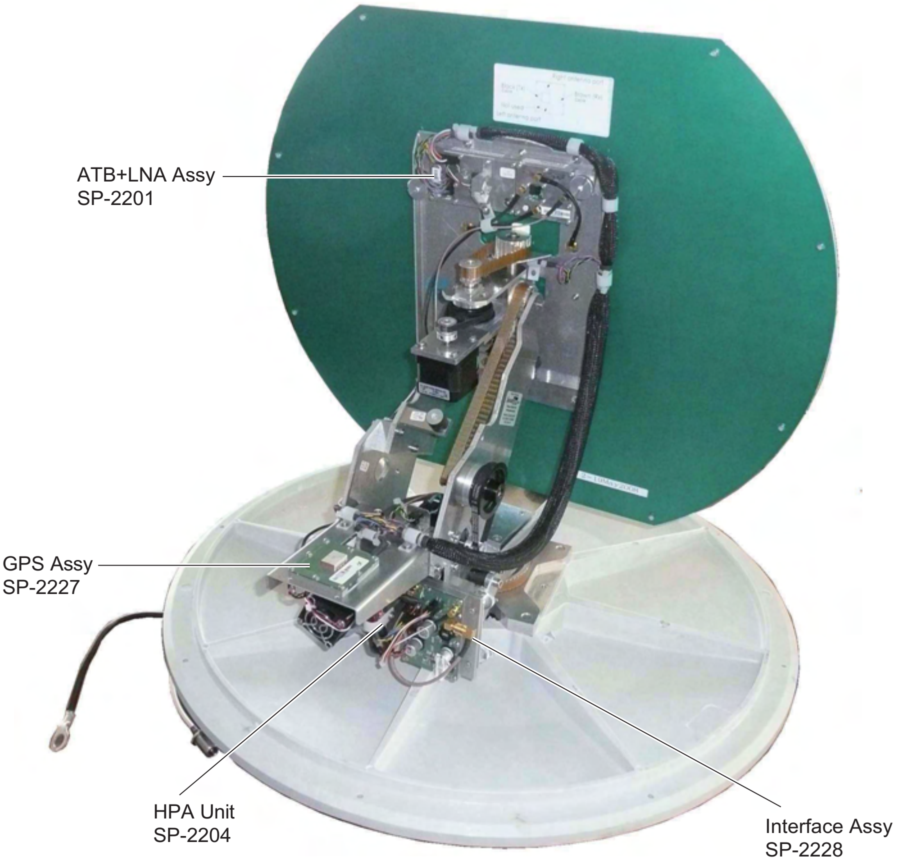
Unit	Printed Circuit Board	Code No.
FB-1250 (FELCOM 250)	SP-2713, GPS ASSY	000-173-443-10
	SP-2707, HPA UNIT	000-173-437-10
	SP-2712, INTERFACE ASSY	000-173-442-10
	SP-2701, ATB+LNA Module	000-173-431-10
FB-1500 (FELCOM 500)	SP-2201 ATB+LNA ASSY	001-083-800
	SP-2204, HPA UNIT	001-083-830
	SP-2227, GPS ASSY	001-084-630
	SP-2228, INTERFACE ASSY	001-084-640
FB-2000	16P0266(LF), POWER PCB	001-069-640
	16P0277(LF), PANEL PCB	001-069-690
	16P0274A(LF), MODEM PCB	001-069-660
	16P0275(LF), IF PCB	001-069-670
	16P0273(LF), HUB PCB	001-069-650
FB-8000	16P0259(LF), HANDSET PCB	001-069-740
FB-3000	16P0270(LF), INCOM. INDI PCB	001-069-620

Parts Location

FB-1250 (FELCOM 250)


GPS Assy
HPA Unit
ATB+LNA Module
Interface Assy

FB-1500 (FELCOM 500)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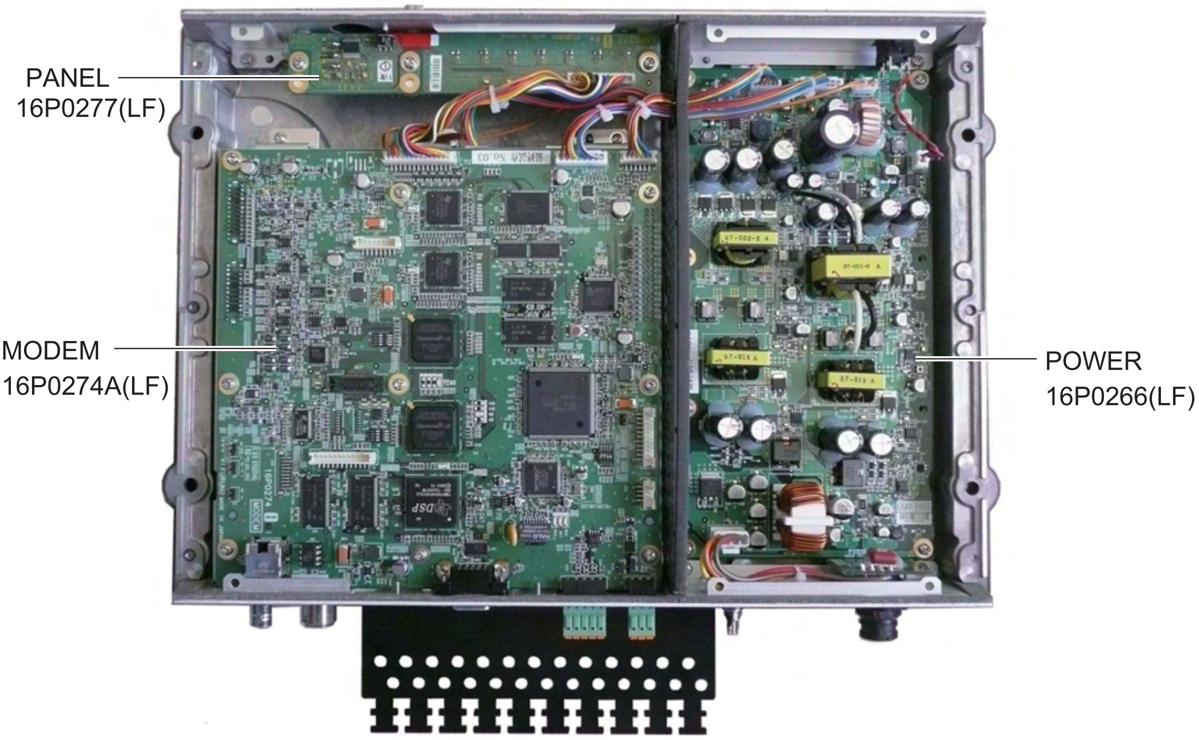
SP-2201
GPS Assy
SP-2227
HPA Unit
SP-2204
Interface Assy
SP-2228

FB-2000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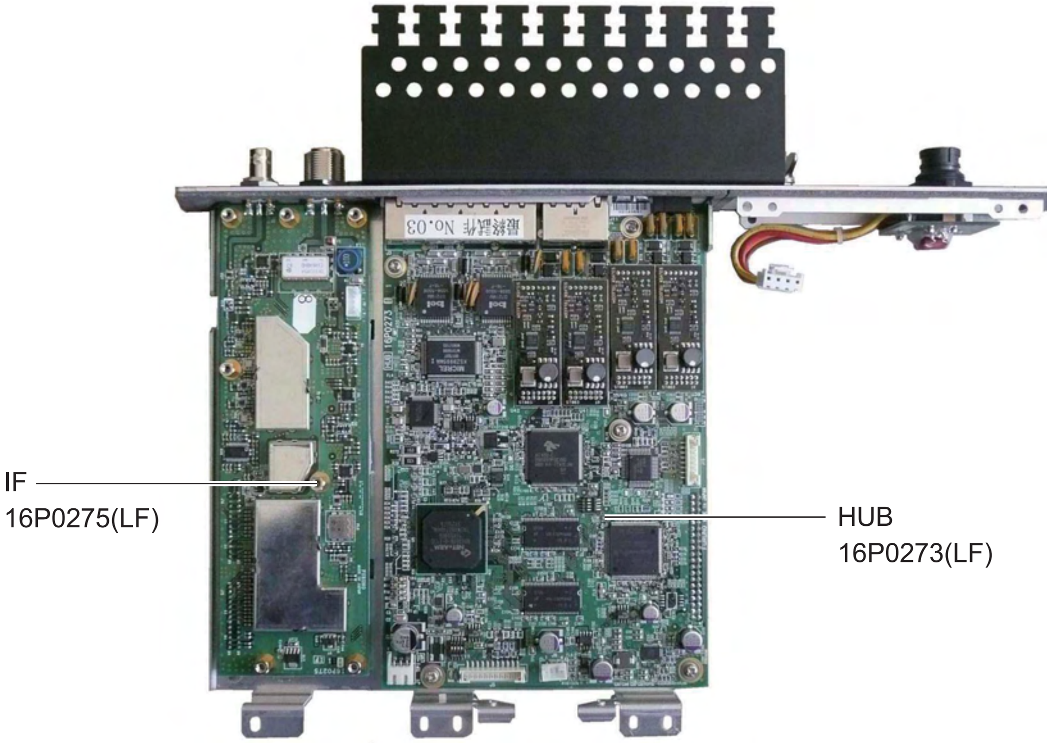
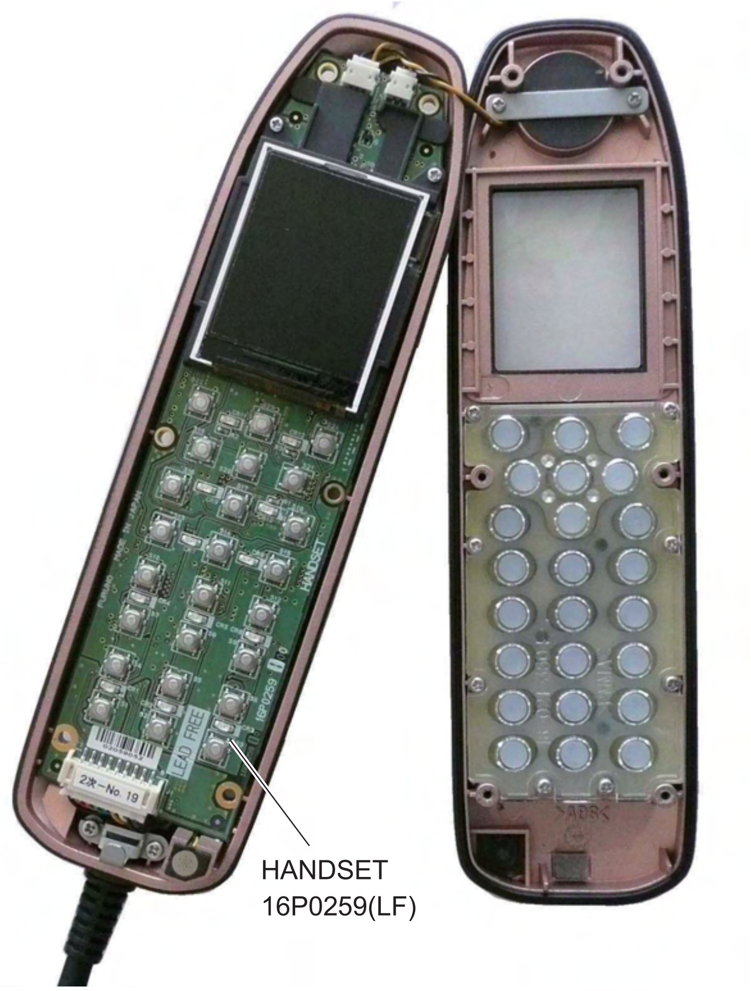
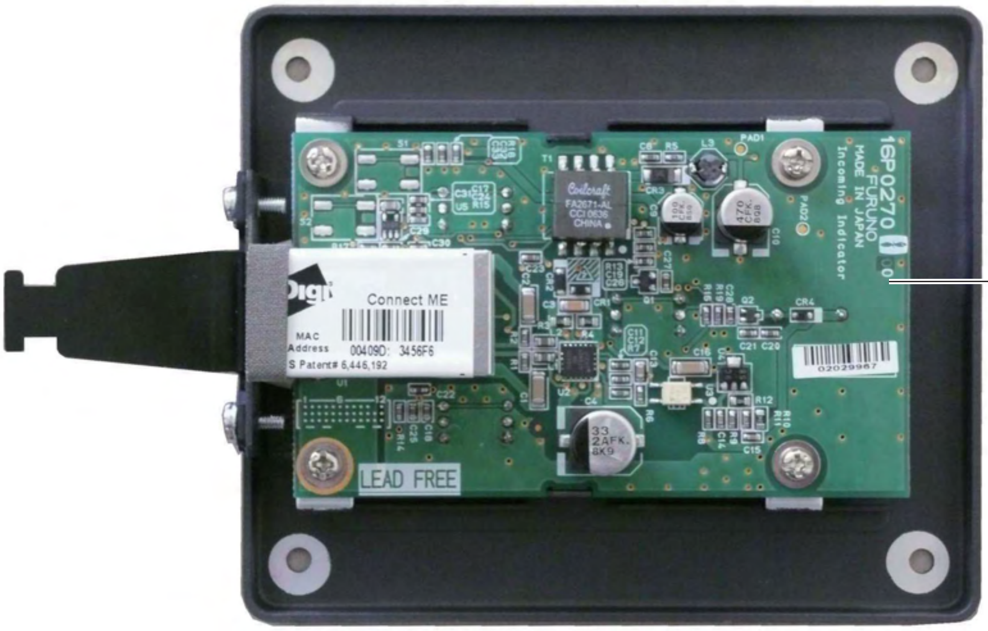
16P0277(LF)
MODEM
16P0274A(LF)
POWER
16P0266(LF)


IF
16P0275(LF)
HUB
16P0273(LF)



HANDSET
16P0259(LF)

FB-3000



INCOM. INDI
16P0270(LF)

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SPECIFICATIONS OF INMARSAT FLEETBROADBAND FELCOM 250/500

1 GENERAL

1.1	Transmit frequency	1626.5 MHz to 1660.5 MHz
1.2	Receiving frequency	1525.0 MHz to 1559.0 MHz
1.3	Channel interval	1.25 kHz
1.4	G/T	FELCOM250: Better than -15.5dB/K FELCOM500: Better than -7dB/K
1.5	EIRP	FELCOM250: 15.1 dBW, FELCOM500:22 dBW

2 ANTENNA UNIT

2.1	Antenna type	Patch array antenna
2.2	Gain	FELCOM250: Greater than 11.0dBi, FELCOM500: Greater than 17.0dBi
2.3	Axial ratio	FELCOM250: Less than 4.0dB, FELCOM500: Less than 2.0dB
2.4	Antenna beam width	FELCOM250: 50° approx. (at -3 dB) FELCOM500: 22° approx. (at -3 dB)
2.5	Stabilization	Three-axis control
2.6	Positioning	Az: 0° to 360°, El: 5° to 90°
2.7	Position accuracy	Within 0.6dB (95% time)
2.8	Tracking	Electrical beam tracking system

3 COMMUNICATION UNIT

3.1	Communication services	
	Voice	4 kbps AMBE+2 or ISDN3.1 kHz audio*
	Data	FELCOM250: Standard IP 284 kbps (RX, best effort) FELCOM500: ISDN UDI/RDI 432 kbps (RX, best effort)
	Short message service	Up to 160 characters
	Facsimile	Group 3 facsimile via 3.1 kHz audio*
3.2	Modulation	QPSK, 16QAM

*: ISDN 3.1kHz audio and facsimile are used at satellite angle 20° or more (for FELCOM250 only)

4 INTERFACE

4.1	Ethernet	4 ports, 10base-T or 100base-TX, PSE class 0 (total up to 30.8 W)
4.2	Analog telephone/telefax	4 ports
4.3	RS-232C	1 port
4.4	Output alarm	1 port, contact closure (normal close), 400V, 120 mA max.
4.5	Navigation data input	1 port, IEC61162-1
4.6	L-band output	1 port
4.7	SIM card slot	1

5 POWER SUPPLY

5.1	Communication unit	12-24 VDC: 9.2-4.6 A (transmit), 2.0-1.0 A (receive)
5.2	Handset	PD class 2, 5 W or less
5.3	Incoming indicator	PD class 1, 2 W or less
5.4	AC/DC power supply unit (PR-240, option)	100-115/200-240 VAC, 1 phase, 50/60Hz

6 ENVIRONMENTAL CONDITION

6.1	Ambient temperature	
	Exposed equipment:	-25°C to +55°C (storage: -40°C to +70°C)
	Protected equipment:	-25°C to +55°C
6.2	Relative humidity	95% at 40°C
6.3	Degree of protection	
	Antenna unit	IP56
	Communication unit	IP22 (tabletop mount with a connector cover and grommets)
	Handset	IP22 (cradle: IPX0)
	Incoming indicator	IP22
6.4	Vibration	IEC 60945
6.5	Motion	Roll: ±30°/8s, Pitch: ±10°/6s, Yaw: ±8°/50s, Rotation: 6°/s, Speed: 30kt

7 UNIT COLOR

7.1	Antenna unit	N9.5
7.2	Communication unit	N2.5
7.3	Handset/ cradle	N2.5
7.4	Incoming indicator	N2.5

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Publication No. DOCQA0207

Declaration of Conformity

CE 0560

We FURUNO ELECTRIC CO., LTD.

(Manufacturer)

9-52 Ashihara-Cho, Nishinomiya City, 662-8580, Hyogo, Japan

(Address)

declare under our sole responsibility that the product

INMARSAT FLEETBROADBAND FELCOM250

(Model name, type number)

is in conformity with the essential requirements as described in the Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment (R&TTE Directive) and satisfies all the technical regulations applicable to the product within this Directive

EN 301 444 V1.1.1: 2000 Spurious related items
IEC 60945 Ed. 4.0: 2002 EMC related items
IEC 60950-1 Ed. 2.0: 2005 Safety related items
IEC 60950-1 Ed. 2.0 A1: 2009 Safety related items

(title and/or number and date of issue of the standard(s) or other normative document(s))

For assessment, see

- Statement of Opinion No: 09214261 issued by Telefication, The Netherlands.

On behalf of Furuno Electric Co., Ltd.

Nishinomiya City, Japan
February 16, 2011

(Place and date of issue)

Takahiko Kusuda
Manager, QMS Secretariat
Quality Assurance Department

(name and signature or equivalent marking of authorized person)

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Publication No. DOCQA0208

Declaration of Conformity

CE 0560

We FURUNO ELECTRIC CO., LTD.

(Manufacturer)

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(Address)

declare under our sole responsibility that the product

INMARSAT FLEETBROADBAND FELCOM500

(Model name, type number)

is in conformity with the essential requirements as described in the Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment (R&TTE Directive) and satisfies all the technical regulations applicable to the product within this Directive

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(title and/or number and date of issue of the standard(s) or other normative document(s))

For assessment, see

- Statement of Opinion No: 09214069 issued by Telefication, The Netherlands.

On behalf of Furuno Electric Co., Ltd.

Nishinomiya City, Japan
February 16, 2011

(Place and date of issue)

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Manager, QMS Secretariat
Quality Assurance Department

(name and signature or equivalent marking of authorized person)